

GAME DESIGN COMPANION

A CRITICAL ANALYSIS OF WARIO LAND 4

by DANIEL JOHNSON



Thanks

...to Richard for giving me the voice,
...to Chris for giving me the drive,
...and to Mum for giving me everything.

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Bioshock
Bit.Trip.Beat.
Braid
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Castlevania: Portrait of Ruin
Contra
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Super Mario Bros. 3
Super Mario Land 2
Super Mario World 2: Yoshi's Island
Tetris
Wario Land 4

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PREFACE

All writers are liars. You know that though, don't you? That's what you learnt at high school when your teacher forced you to write those essays on some book you didn't care about and some theme seemingly unrelated to it. We write books about one thing, only to talk about something else. I too must confess to such two-faceness. And as is the tradition with prefaces, I shall now self-indulgently reveal the lie before you've had a chance to read the book and realise it for yourself.

This book is not an analysis of *Wario Land 4*. Rather, it is a critique of contemporary games writing, in particular the broadly-defined games criticism. I evaluate games criticism through the proposition of games analysis, a new type of games writing which seeks to improve the art and science of video games through clear language, authoritative evidence, and a focus on interactivity. *Game Design Companion: A Critical Analysis of Wario Land 4* is an example of games analysis brought to its logical conclusion: a piece of writing which thoroughly explains the workings of an entire game. Everything from mechanics to engagement to level design is covered. Without trying to sound arrogant, I would contest that there has never been a deeper, more comprehensive piece of writing ever written about a video game.

This is not to condemn games criticism nor discourage those engaged in thoughtful games discussion (it is, after all, for you guys that I wrote this book), however, while there are some genuinely excellent pieces of writing out there, games criticism certainly has a few issues in its current form¹. Thus, it is my intent to use games analysis as a means to improve the state of games criticism. I don't see games analysis as a replacement for games criticism, but rather as an important subset of the broader discussion. What sets game analysis apart from other forms of games writing is that it acknowledges the following three points.

#1 GAMES ARE COMPLICATED

Video games are sophisticated systems of rules which employ the expertise of art, maths, science, architecture, literature, psychology, and cinematography, just to name a few. The book, over 500 pages of critical

¹ Game designer, Dan Cook, succinctly covered many of these problems in his essay, A blunt critique of games criticism: <http://www.lostgarden.com/2011/05/blunt-critique-of-game-criticism.html>. I would recommend reading his article to further understand some of the issues this book attempts to address.

analysis on what many would consider a relatively simple game, more than validates this point. The complicated, interdisciplinary nature of video games makes talking about them with any authority quite difficult.

#2 THUS, A CLEAR LANGUAGE IS NEEDED TO CRITICALLY DISCUSS THEM

Some games writers speak of this magical day when the language needed to critically discuss video games will appear out of thin air and they'll finally be able to talk about the medium with real depth. While these people are off daydreaming, others have been hard at work making such language a reality. Tadhg Kelly's *What Games Are*² is one such example. For this book, I've used the work of Richard Terrell. Richard runs the Critical Gaming blog³ and for the past 6 years has been developing a critical vocabulary in which to understand games. His Critical Glossary contains more than 450 terms and is backed up with thousands of pages dedicated to theory and examples from popular games. If you're interested enough in games to buy this book, then Richard's blog should immediately strike you as profound. I urge you to take a look before digging into the main analysis.

#3 NO EVIDENCE, NO AUTHORITY

The most confounding and inexcusable aspect of games criticism, and games writing in general, is the lack of evidence to support a writer's claims. Without evidence there is only opinion, and if there's anything we've learnt from the internet, it's that anyone can, and does, have an opinion. Evidence grants authority. It proves that the writer isn't just spouting out ideas, but has a considered and balanced argument. In the very least, it shows the reader how the writer came to form their opinion. In fairness, many writers do provide some form of evidence in their writing, but it's often vague, insufficient, or never properly scrutinised. Saying that game X is boring because levels Y and Z are poorly designed doesn't tell the reader how levels Y and Z are poorly designed or how two poorly designed levels can make an entire game boring, never mind what "*boring*" means. The more extensive the evidence and thorough the explanation of the connection between the evidence and the argument, the more credible the article.

(This is why FAQ writers and Let's Players have a leg up over game critics. FAQ writers because they've already written extensively about the game system, and therefore have it all mapped out in their head. Let's Players

2 What Games Are Website: <http://www.whatgamesare.com/>

3 The Critical Gaming Blog: <http://critical-gaming.com/>

because they have the evidence right in front of them, which makes it easy to shoot off a quick observation in context).

When evidence is utterly void, the only way to grab reader interest is to inflate opinion. Thus, we see posts with titles like “*Is Zelda Skyward Sword the worst game in the series?*”, backed up with a few paragraphs of fashionable ignorance. Forget about looking at the dungeons, inventory, story, or game structure.

In *Game Design Companion: A Critical Analysis of Wario Land 4* all assertions are backed up with evidence and detailed explanations. My opinions are downplayed to the point that I don't even reveal if I like *Wario Land 4* or not. The goal is to interpret the game for what it is; not to talk about my feelings. I've chosen this super objective approach so that the book acts as a polarising alternative to the over-abundance of opinion out there. I want the nuances of the game design to set the agenda, because it's these details that define the game.

Of all the games one could write a book about, don't you find it a little odd that I chose *Wario Land 4*? I could have written about a *Bioshock* or an *Uncharted*. Instead, I chose a simple game with a child-friendly veneer released more than 11 years ago on a portable platform—talk about irrelevant! This decision was intentional. Along with making a case for games analysis, I also want to challenge three aspects of the game enthusiast community:

- » The games press's lack of enthusiasm for portable games and games for children.
- » The general stigma of playing and writing about *old* games.
- » The focus on games which emphasise ideas over interactivity (i.e. *Bioshock* and *Journey*) by writers of games criticism.

So there you have it: my ulterior motive is revealed and you're free to press on to the first chapter. One final word though. I've spent the past 2 years cramming every bit of observation and insight into this book. This will make it a challenging read at times, but I encourage you to stick with it. By the end, I'm sure that you'll have grown your understanding of game design and be able to further appreciate the level of craftsmanship that goes into these wonderful, interactive works of art.

INTRODUCTION

WHAT IS WARIO LAND 4?

HOW TO READ THIS BOOK

ONLINE REFERENCE GUIDE

A FEW WORDS ON STYLE

WHAT IS WARIO LAND 4?

WHAT IS WARIO LAND 4?

Wario Land 4 is the fourth instalment in a long-running series of 2D platformer games developed by Nintendo. The games follow antihero Wario on his quests to acquire, and sometimes reclaim, a large fortune of treasure. *Wario Land 4* was released in Japan for the Game Boy Advance in August 2001. The game came out 2 months later in the west and 3 years later in China on the Chinese-only iQue platform. *Wario Land 4* is regarded as one of the first notable releases for the GBA.

The *Wario Land* series began as an offshoot to the *Super Mario Land* series, itself a Game Boy spinoff of the main-line Mario games. Wario first appeared as the antagonist and final boss of *Super Mario Land 2: 6 Golden Coins* in 1992. He was designed as an inverse of Mario, an overweight thug who takes pleasure in greed and self-interest. In 1994, he ousted Mario and took over the *Mario Land* series with *Wario Land: Super Mario Land 3*. The game features a different type of 2D platforming, better suited to Wario's angry demeanour. Following the principle of form fits function, he can't run, but can body slam enemies, carry them above his head, and throw them into walls. Hat power-ups grant new abilities like temporary flight and special attacks.

A sequel to *Wario Land* was released in 1998, followed by an updated colour version a year later. In *Wario Land 2*, Wario can't die. He only loses coins or, if attacked by the right enemy, morphs into one of several states. These transformations replaced the hat power-ups and injected a strong puzzle element into the platforming.

Wario Land 3 was released a year after the colour version of *Wario Land 2*, also for the Game Boy Color. Wario and the transformation states mostly remained the same. The progression model, however, was completely overhauled. Each level has four coloured keys and chests. Open a chest and Wario is given a new item or ability which either opens a new level, modifies a pre-existing one, or allows him to reach a previously inaccessible area. The player doesn't complete levels in a set order, rather they follow multiple trails of progression, weaving around the map, until they've acquired all the items needed to face the final boss. This progression structure brings *Wario Land 3* closer to a *Metroid* or *Castlevania* game.

Wario Land 4, released a year after *Wario Land 3*, made fundamental revisions to the series template. The GBA's higher resolution screen allowed the developers to shift the game's focus to action platforming as seen by the changes to transformations (which now revolve around navigation)

and the addition of a high-risk-high-reward DASH ATTACK mechanic. The progression model was simplified and folded level design (where Wario reaches the end of a stage, turns around and races back to the start) fleshed out the levels into more wholesome chunks of gameplay.

The previous games in the series are discussed further in [Wario Land: An Evolutionary History](#).

HOW TO READ THIS BOOK

HOW TO READ THIS BOOK

Game Design Companion: A Critical Analysis of Wario Land 4 is quite unlike any other book you've read on games. In order to fully appreciate the analysis, you need to be an active reader. Here are some recommendations on how to make the most of this book:

- » Before you start reading, play through *Wario Land 4* once. This way, the Need to Know section will reinforce the basics and fill in any gaps, instead of introducing the game from scratch. If you haven't played *Wario Land 4* since it was released back in 2001, then it might be worth finishing it again as a refresher. After all, it's not like it's a particularly long game. You can beat it in a week tops.
- » Flick through the book before playing to get an idea of the topics covered. Think about what might be said and what your ideas are regarding each topic.
- » Play as you read. For Digging Deeper, this may mean tinkering for a few minutes every 20 pages or so. Since the Level Analysis is rather specific, it's best to play a level either before, after, or as you read about it. Choose the best approach that suits you.
- » Use the reference guide (following article) to access the video and larger images that can't be included in the book.
- » I've tried to explain the terminology presented in the book as clearly as possible, however, much of it *is* new language, so it may be difficult to grasp at first. Please refer to Richard Terrell's Critical Glossary¹ if you get stuck. You'll find links to articles which explain the terminology in more detail and with examples.

EXTRA WORK FOR KEEN READERS

- » When you play, be observant and take notes. If you can, try to unpack your thoughts by finding examples in the game which support your ideas.
- » Play the previous games in the series. You'd be surprised how similar *Wario Land 4* is to its predecessors. Then take what you learn here and apply it those games. Scratch that: why not just take the concepts from this book and apply them to games you're already playing? I wrote the book not just as a critique of *Wario*

1 Richard Terrell's Critical Glossary: <http://critical-gaming.com/critical-glossary/>

Land 4, but as a game design textbook too, so use it accordingly. Knowledge is power.

- » The essays are clear and filled with enough examples to stand for themselves, but don't take them at face value; play and check for yourself. If I've made a mistake somewhere—which I almost certainly have—then write me an email ([danielprimed \[at\] gmail \[dot\] com](mailto:danielprimed@gmail.com)) and I'll post the corrections on the web portal. I'm also happy to receive any general feedback as well.
- » After finishing the book, look at the games writing you already read and ask yourself: do the writers back up their opinions with evidence? If so, what evidence and how is it scrutinised? Is it just mentioned in passing or does the writer take the liberty to explain the evidence and tie it to their opinion?

ON THE BOOK'S STRUCTURE

Each section is written to lead into the next. Need to Know introduces the basics and tries to get the reader thinking about the various parts of the game system. Digging Deeper uses this foundation to explore the game in more detail. The Level Analysis takes everything covered up to that point and applies it to the levels. The Topical Essays round out the book with a few discussion pieces.

Analysis consists of two inseparable parts: the introduction of the material to be analysed and the analysis itself. The inherent problem with analytical writing then is that it's front-ended by potentially uninteresting preamble. The thing is, the introduction is essential to the analysis. It's what puts the reader in the right frame of mind to take in the writer's examination of the material, regardless of what they already know or think they know. When it comes to a book like this, there's a lot of context to set up. So other than trying to write the expository parts as succinctly as possible, I've also organised the book so that the ratio of introduction to analysis skews more towards analysis the further into the book. This way, the text builds the reader up for the deeper analysis near the end.

I liken this to Chinese cooking and the proportion of meat and vegetables to rice. So, Need to Know is like a 牛肉炒饭 (beef fried rice). There's little bits of analysis chopped up between the exposition, enough to make the dish worthwhile. Digging Deeper is like a 红烧牛肉盖浇饭 (simmer-fried beef on a bed of rice). There's equal amount analysis and exposition, and they complement each other well. The Level Analysis is like a 红烧牛肉 (simmer-fried beef). Almost all of it is meaty analysis. The Topical Essays are like the soup. There's some analysis, some exposition, but it's got a different flavour altogether.

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Video game analysis benefits greatly from the range of media possible on a webpage. There's no doubt about that. Text is a clunky means of communicating *some* ideas when videos, screenshots, diagrams, and external links convey meaning almost immediately.

I've done my best to include a wealth of supplementary media, 90 percent of which you can find spread across the pages. The remaining 10 percent, however, simply doesn't fit in the book format. Video and level maps which stretch out to over 1,000 pixels on a computer screen are the obvious examples. If you have the e-book edition and your reading device is connected to the internet, you can just click the links in the on-page references to see the images and video directly. However, if your device is not online-enabled, or if you just want to see the media on a larger screen, then you can use the book's online web portal¹. It contains *all* the supplementary media, at full size and in colour.

In addition to the reference guide, the online portal also contains updates, extra material, links to external resources, and the first draft of the book. It's a go-to resource for an enthusiastic reader like yourself.

On a related note, if you find any of the images to be too small, on most devices, you should just be able to click or tap on the image to have it display at its original size.

¹ Reference Guide: <http://danielprimed.com/warioreference/>
Web Portal: <http://danielprimed.com/warioland4/>

A FEW WORDS ON STYLE

A FEW WORDS ON STYLE

A consistent style brings clarity to a text. *Game Design Companion: A Critical Analysis of Wario Land 4* is a little different from your normal piece of writing and therefore requires a unique approach to style.

NAMING CONVENTIONS

All names of mechanics and game elements are taken from the *Wario Land 4* instruction booklet. What the manual lacks, the Super Mario Wiki¹ fills in. For the few cases where the Super Mario Wiki doesn't have a name, I make up one myself.

I have altered some names where the original may create confusion. For example, in the instruction booklet, "switch" refers to the blue switch with the frog on top. In the book, this switch is known as a frog switch and "switch" refers generally to the coloured switch blocks. A frog switch has a particular purpose, so I changed the name to reflect that. Another example, SUPER SMASH ATTACK is replaced with HEIGHTENED SMASH ATTACK. Although awkward-sounding, "heightened" clarifies that added verticality is needed to execute the mechanic—whereas "super" could mean anything from extra charge to different inputs.

GAME MECHANICS

Game mechanics are printed in CAPS to distinguish between an explicit reference to a mechanic and standard use of a word. For example:

An ATTACK breaks blocks with a ram attack.

The first attack refers to a mechanic known as ATTACK. The second is standard use. It's important to take note of this convention as two seemingly identical sentences can have different meanings.

JUMPING is good for avoiding obstacles.

Jumping is good for avoiding obstacles.

The first sentence refers to the mechanic known as JUMP. The second refers to all the jump mechanics in the game. I don't group Wario's mechanics in the transformation states (for example, spring jump as Bouncy Wario) in with the standard mechanics, so they're presented in lower case.

¹ *Wario Land 4* page on Super Mario Wiki: http://www.mariowiki.com/Wario_Land_4

SKILLS

Occasionally you'll come across a sentence like this:

The player must then wait for the Harimen to move aside before jumping (timing).

Timing is one of the five skills of the DKART system (dexterity, knowledge, adaption, reflex, and timing). You can read more about DKART on the Critical Gaming blog². Instead of writing “which requires timing skills”, which can grow tedious when repeated multiple times in one article, I just put the skill in brackets. Other times I'll use the verb form:

The player must wait for the Harimen to move aside, timing his movements, before making the jump.

Whether explicitly stated or not, it should be easy to determine a reference to a particular skill.

WARIO VS. THE PLAYER

Observe the following sentence. Why is it incorrect?

When an enemy attacks the player, Wario loses health.

Enemies can't break out the game and physically attack the player! Even if they could, doing so would cause the player to “lose health”, not Wario. Yet, for all its stupidity, replacing the avatar's name with “the player” is commonplace in games writing. The reason why is understandable: video games are half-real experiences. In the fiction of the game, Wario defeats the final boss, but, in the real world, the player defeats the final boss (through their cognition and inputs), exchanging one for the other is quite natural. I try to refer to either role as accurately as possible. So, crystals persuade the player and Wario jumps into the water. Sometimes though, I break this rule for the sake of readability. In which case I'll say something like:

The crystals persuade the player to jump into the water.

as opposed to...

The crystals persuade the player to get Wario to jump into the water.

ROOMS

Rooms in levels are referred to by their room number and marked with a capital letter. For example, Room 2.

2 An Examination of Skill Part 1: <http://critical-gaming.com/blog/2010/3/31/an-examination-of-skill-pt1.html>

NEED TO KNOW

GETTING STARTED

WARIO

LEVEL ELEMENTS

THREATS

REWARDS

GAME STRUCTURE

OTHER

GETTING STARTED

GAME ELEMENTS

GAME ELEMENTS



From the screenshot above, we can identify *Wario Land 4*'s core elements. Before I tell you outright though, take a stab for yourself. When you're ready, check your predictions below.

- » Wario/The Player
- » Level Elements
- » Enemies
- » Rewards
- » Hearts

Did you guess correctly? I hope so. Let's cross-check our ideas:

WARIO/THE PLAYER

Wario is the game's avatar. He has a set of abilities called mechanics. Mechanics allow the player to make interactions as the avatar. If Wario interacts with certain enemies or level elements, or certain enemies or level elements interact with him, he'll transform. For example, if Wario touches a flame, he'll run around with his pants on fire. Transformations are special states that alter Wario's properties and mechanics.

LEVEL ELEMENTS

Level elements are the things Wario can interact with using the mechanics. A platform can be JUMPED on, a slope can be ROLLED down, a rock can be THROWN into a wall, and a block can be broken with an ATTACK.

ENEMIES

Enemies are threats of punishment, with penalties being either hard or soft. Hard punishments result in a loss of hearts. If all of Wario's hearts are lost, the player must restart the level from the beginning. Losing health is thereby the most direct way of upsetting the player's progress. Soft punishments are inconveniences, like Wario being bumped off a platform or transformed when the transformation abilities aren't needed.

REWARDS

Rewards have multiple purposes. Firstly, they encourage the player to engage more deeply with Wario's mechanics. For example, following a line of crystals underwater requires more effort than simply swimming through the channel. Secondly, rewards allow the player to organically scale the difficulty. They can choose whether or not to collect the crystals, how many to get, and when to get them. The various options give them more control over the level of challenge. Thirdly, rewards direct the player's attention, leading them through the level, like a trail of jelly beans.

HEARTS

Wario has eight heart containers and a small health bar. Floating hearts, spread throughout levels, restore one heart container. Small hearts, dropped by most enemies when beaten, restore an eighth of the health bar. Once the bar is completely filled, a heart container is replenished. Small hearts, like rewards, are an optional way to scale the difficulty. Being linked to Wario's health though, they're more of a necessity.

Game elements layer on top of each other, fleshing out the level. If we take any single part away, *Wario Land 4* is less engaging. Without enemies, the challenge is significantly diminished. Without health, there is no tension. Without level elements, there is no level. Without the avatar, there is no gameplay. Familiarise yourself with the game elements as they'll come up a lot later on.

WARIO

MECHANICS

TRANSFORMATIONS AND NAVIGATION

MECHANICS

Mechanics are like words. Although they contain meaning, they can't communicate on their own; they must be placed within the context of a sentence to make sense. In *Wario Land 4*, Wario's abilities (mechanics) only communicate (create interplay) when placed in the context of a level (alongside other game elements). For now though, we'll just look at the mechanics in isolation. What do they do? How are they different from each other? How are they balanced with strengths and weaknesses? Later, in the Level Analysis, we'll understand them in the context of a sentence.

Core Mechanics

Walk
Attack
Dash Attack
Slow Swim
Forward Stroke
Upward Stroke
Smash Attack
Climb
Slide down ladders
Roll
Pick Up
Throw
Jump
Look up
Crouch

Combination Mechanics

Crouch Slide
Crouch Walk
Crouch Jump
Attack Jump
Dash Attack Jump
Roll Jump

Extention Mechanics

Heightened Smash Attack
Charge Throw

There are twenty-three mechanics: fifteen core mechanics, six combination mechanics, and two extension mechanics. Core mechanics are completely independent. Combination mechanics contain two interdependent functions. For example, ATTACK JUMP consists of horizontal movement (ATTACK) and vertical movement (JUMP). Without the former, Wario can only jump on the spot. Without the latter, Wario can't clear chasms. Extension mechanics build off their base mechanic, often adding an extra layer of engagement. For example, CHARGE THROW extends THROW, adding a timing element.

MECHANICS AND FUNCTIONS

The mechanics can be divided into three groups: jump, traversal, and attack. The diagram below organises them under these headings.

Wario Land 4's Mechanical Structure

Traversal

Walk
Crouch Slide
Crouch Walk
Attack
Dash Attack
Slow Swim
Forward Stroke
Upward Stroke
Smash Attack
Heightened Smash Attack
Climb
Slide down ladders
Roll

Attack

Attack
Dash Attack
Pick Up
Throw
Charge Throw
Smash Attack
Heightened Smash Attack
Roll
Upward Stroke
Forward Stroke

Jump

Jump
Crouch Jump
Attack Jump
Dash Attack Jump
Roll Jump

Misc

Look Up
Crouch

Several more mechanics could technically fall under multiple categories. For example, WALK and JUMP can knock an enemy into water, defeating it. This makes them attack mechanics. I don't, however, acknowledge them as such. The mechanics labelled under multiple categories meet their respective functions. That is to say they have power (more on this later). So, DASH ATTACK'S fast speed makes it great for traversal, but, as the only mechanic which can break thick blocks from the side, it's also an important attack mechanic. WALK and JUMP, on the other hand, can't break blocks, and depend on an external element, like water, to attack enemies. They're far too impractical to be classified as attack mechanics.

DASH ATTACK is a multifunctional mechanic. It is useful for both attacking and traversal. If the multifunctional mechanics were instead broken into several mechanics, one for each function—that is, if you count all the mechanics in the second list, including duplicates—the twenty-three mechanics would increase to thirty. Allowing a handful of mechanics to achieve more than one function reduces the overall number of abilities the player has to learn and master. This minimises complexity and streamlines the learning process.

CROUCH and LOOK UP don't belong to any of the three main categories. LOOK UP has Wario enter doors when he stands in front of one, and tilts his head upwards when he's not. CROUCH is a transitional mechanic for CROUCH WALKING and CROUCH SLIDING.

Wario begins with all of these mechanics from the get-go. There's no upgrades and no way to lose abilities.



Wario's ability to execute a mechanic depends on his current state. These states include:

Neutral – Wario stands on the ground, put there by gravity. In this state, he can use most mechanics aside from the ones which require an external element (the swimming mechanics, SMASH ATTACK, and HEIGHTENED SMASH ATTACK).

Idle (on land or at the water's surface) – Wario has four animations that he slips into when left alone for a short while. Pre-fold, he lifts dumbbells or skips with a skipping rope. Post-fold, under the timer, he nervously hops between legs. In water, he flails his arms around in panic. Pressing A, B, or the d-pad exits the state.

Knocked – When Wario collides with an enemy's weak point, he's knocked back. During this time, he's unable to execute mechanics. He also drops anything he's holding.

Bounce Back – After attacking a regular block, thick block, or wall, Wario bounces back and control is taken away from the player. This includes the animation following a (HEIGHTENED) SMASH ATTACK of Wario holding his position with his hat bobbing up and down.

Recoil – After attacked or touching something hazardous, Wario

launches back in pain and flashes brightly. In these frames, he's invincible and control is momentarily taken away from the player. After recoiling, Wario enters the flashing recovery state.

Flashing Recovery – After recoiling, or exiting a transformation, Wario is semi-transparent and flashes to indicate that he's still invincible. The player can freely control Wario at this time.

In Water – Wario can perform the swimming mechanics.

Transformation – Wario is transformed. There are ten unique transformations, each with their own properties and mechanics. I cover them in detail in the subsequent section.

Falling – Wario can SMASH ATTACK and HEIGHTENED SMASH ATTACK in this state.

In Mechanic – Wario is in the middle of a mechanic's animation. The player can cancel WALK, ATTACK, SMASH ATTACK, DASH ATTACK, ATTACK JUMP, and the three swim mechanics, albeit some of them only at particular frames.

Attacking State – Wario can hurt enemies and break blocks. Not every frame of the attack mechanics put Wario in the attacking state. During DASH ATTACK'S warm up, for instance, Wario is in mechanic.

Crouched – In use of CROUCH. Wario squats to a unit-high (half his height), walks at a slower speed, and can only jump to half the height of a full JUMP. He remains in this state when wedged in a unit-high passage, or if a square block lands on him (Toy Block Tower). He springs back to the neutral state after exiting a unit-high passage, moving out from under a square block, or once the player releases the down arm on the d-pad. Crouched, Wario can only CROUCH WALK and CROUCH JUMP. He must be in the neutral state to perform a CROUCH SLIDE.

Holding an Object – After Wario PICKS UP a projectile, he can only drop, THROW, or CHARGE THROW it. Otherwise he can WALK around and JUMP. Some heavy objects weigh him down, shortening his jumps and slowing his movement.

Rolling – Wario ROLLS horizontally until he hits a wall. In this state, he's 1 unit-tall, impervious to damage, and can ROLL JUMP.

Climbing – When CLIMBING a ladder, vines, or mesh, Wario maintains his horizontal and vertical positions. He can only fall off, SLIDE down, or move along the structure.

These details may seem like a lot to take in, especially when laid out in full, with text and lists. For the player though, everything is interactive and presented in context, so they learn fast.

The analysis of each individual mechanic is organised by the three categories (traversal, attack, and jump). This means that mechanics with several functions, like ATTACK, will be covered multiple times. Each time though, the analysis is pertinent to the respective function.

TRAVERSAL MECHANICS

The traversal mechanics allow Wario to move through the level. Of the three categories, traversal is the most varied, including horizontal movement, vertical movement, swimming, and climbing. Wario can cross unit gaps in the ground with all horizontal movement mechanics bar CROUCH WALK and CROUCH SLIDE.

WALK

Wario's WALK maintains a constant speed. He cannot build walking momentum and transition into a run. Walk obeys the rules of form fits function. That is, because Wario looks overweight, he acts overweight and can't naturally accelerate.

I made rough calculations of the time it takes Wario to cross a 480 pixel room ([Room 4 of Hall of Hieroglyphs](#)) with each of the horizontal movement mechanics. The results are as follows:

Crouch walk: 8+ seconds

Walk: 4 seconds

Continuous use of ATTACK: 2.5 seconds¹

Dash attack: 2.5 seconds

Roll: 2.5 seconds

¹ Dependent on how much the player lags with button presses. I lagged for as little as I possibly could.

Ruling out CROUCH WALK, which is primarily used for passing through unit-high passages, WALK is the slowest form of horizontal movement. Slower movement means that objects enter the screen's view slower, making WALK the mechanic of choice for less-experienced players and useful in times of necessary care. Furthermore, unlike ATTACK, DASH ATTACK, or ROLL, there's no bounce back after hitting a wall, which can leave Wario open to attacks or see him to land on a hazard. WALK is therefore a low risk, low reward mechanic.

CROUCH

Although it's not a traversal mechanic, I include CROUCH here as it's needed to transition into two of the traversal mechanics, CROUCH WALK and CROUCH JUMP. There are two ways to CROUCH: hold the down arm of the d-pad or have Wario WALK towards a unit-high passage running along the ground. In the latter case, he'll automatically CROUCH and enter. The automation streamlines input, reducing unnecessary manual process. Once Wario's wedged inside a unit-high passage, the player doesn't need to hold down on the d-pad any more. Aside from transitioning into other mechanics, CROUCH is also a means of dodging oncoming obstacles.

CROUCH WALK

When crouched, Wario can walk in the direction he's facing. As mentioned, CROUCH WALK is the slowest form of horizontal movement, but it's also the only way to manually move at 1 unit-high, which is necessary in certain situations. Speed is sacrificed for form.

CROUCH SLIDE

The CROUCH SLIDE, CROUCHING during an ATTACK, is Wario's equivalent of Mario's running slide. The extraneous mechanic is a stylish way of entering the crouched state. More experienced players may use it to riskily slide underneath a jumping enemy.

ROLL

ROLLS are initiated by pressing the down arm of the d-pad when Wario's on a slope. Once Wario comes off the slope and hits the ground, he enters the rolling state, bouncing back to the neutral state after hitting a wall. As Wario slides down the slope, the player can JUMP to cancel the ROLL.

When ROLLING, Wario is in both the rolling and attacking states, which makes the mechanic a fast-moving, invincible, attacking CROUCH WALK. These advantages are offset by a lack of control—Wario can only jump when ROLLING—and potential use dictated by the location of slopes. Using ROLL to traverse terrain is thereby a high risk, high reward proposition.

CLIMBING

When Wario stands above or in front of a ladder, vines, or meshing, he can CLIMB them. Wario can move in four directions along meshing and two on the unit-wide vines and ladders. JUMPING exits the climbing state.

SLIDING (DOWN)

Pressing the down arm of the d-pad and B sees Wario SLIDE to the bottom of a ladder, vine, or meshing. Wario can only SLIDE after CLIMBING onto one of the three level elements, so the two mechanics are interlinked. The player can cancel a SLIDE by CLIMBING mid-SLIDE. SLIDING allows more experienced players to speed up the game and scale the difficulty.

SLOW SWIM

Wario can gently kick his feet to SLOW SWIM with a push of the d-pad. He can swim horizontally, vertically, and diagonally. SLOW SWIM lacks the speed of the other two swimming mechanics, as well as the joltiness, which makes it better suited to accurate, careful swimming.

FORWARD STROKE

Pressing B has Wario push through water with his hands. The longer the button is held, the fuller the stroke and further the distance travelled. The player can choose between making one long stroke or several short strokes. The d-pad directs Wario's swimming path; holding up or down effectively turns the horizontal movement mechanic into an UPWARD STROKE, as Wario swims vertically. The animation of the two mechanics is identical. In regards to traversal, the only difference between them is that Wario can't jump out of the water with a FORWARD STROKE.

UPWARD STROKE

Pressing A sees Wario UPWARD STROKE. Unlike the FORWARD STROKE, holding left or right on the d-pad doesn't skew Wario's direction. When at the water's surface, executing an UPWARD STROKE has Wario jump out the water. This doesn't work if the player holds the down arm of the d-pad and UPWARD STROKES.

The inputs of the FORWARD and UPWARD STROKES are modelled after ATTACK and JUMP. Wario ATTACKS with B, which displaces him horizontally, as does the FORWARD STROKE. Wario JUMPS with A, which displaces him vertically, as does the UPWARD STROKE. The similarity makes it easy for the player to transition between swimming and platforming sections.

ATTACK

ATTACK is primarily designed to clear obstacles and beat down foes, but it's also a convenient way to travel. For a single button press, Wario moves at the fastest speed for roughly a second. Although that doesn't sound like

much, string several ATTACKS together and Wario can zip through an area with ease. Pressing in the opposite direction on the d-pad to which Wario is facing ends the animation abruptly. With short animation cycles and prompt cancelling, ATTACK is a supremely portable traversal mechanic. The main downside is that the return to the neutral state between animations can drag continuous movement.

DASH ATTACK

DASH ATTACK debuts in *Wario Land 4* as a significant addition to Wario's repertoire. Think of it as a beefed up ATTACK with maxed out risk/reward.

Pressing and holding either of the shoulder buttons (acceleration pedals) and either the left or right side of the d-pad (ignition) gets Wario running. The run builds up visible charge to indicate that Wario has entered the attacking state. His speed remains the same. DASH ATTACK'S sprint can be maintained as long as the player holds down the appropriate buttons and avoids all obstacles. Given Wario's fast speed, this is considerably difficult. When the player releases the shoulder button (acceleration), Wario reverts to a WALK (loses speed). When they release the d-pad (turning off the ignition), Wario (the car) skids out of control. The player can nullify the skid and cancel the animation through advanced techniques.

Maintaining the DASH ATTACK over a clear path is much easier than keeping a string of ATTACKS going, however, the skid and required run-up balance out these advantages.

SMASH ATTACK AND HEIGHTENED SMASH ATTACK

Widely known by fans as the ground pound or butt stomp, the instruction booklet calls this mechanic SMASH ATTACK, so I'm going to go with that term. When Wario's in mid-air, pressing the down arm of the d-pad has him SMASH ATTACK. The SMASH ATTACK mechanics speed up descent, but limit Wario's ability to move left and right. In regards to traversal, SMASH ATTACK and HEIGHTENED SMASH ATTACK are identical.

ATTACK MECHANICS

The attack mechanics allow Wario to clear enemies, break blocks, shift terrain, and do context-specific actions. These interactions lead to coins, which feed the greed aspect of Wario's antihero persona. Mechanics which stun or knock enemies don't count as attack mechanics.

ATTACK

As with every iteration of the *Wario Land* series, Wario's primary attack is a shoulder ram move. ATTACK is relative to the position he's facing. Each time Wario ATTACKS a wall or regular block, he bounces back. On ATTACKING an enemy's weak point though, he returns to the neutral state, cutting the mechanic's animation dead.

Wario's Hit box



Wario's hit box is 2 units tall, 1 unit wide, equivalent to 2 unit blocks stacked ontop of each other. As we can see, some of his body is outside the hit box. Although this may appear inaccurate, the small hit box allows for near misses from the front and behind, meaning more realistic interactions with the environment. If Wario's hit box were the size of figure, he'd be able to hold up falling objects with his nose.

The sparks around Wario as he ATTACKS over-exaggerates his hit box, which doesn't extend to the upper and lower flares. The animation is also a little janky and disorientating. What makes the mechanic attractive though is its portability and immediacy of bringing Wario into the attacking state. ATTACK'S low risk, low reward makes it the most reliable attack mechanic.

DASH ATTACK

DASH ATTACK has two advantages: it can clear thick blocks and plough through enemies and regular blocks without pause or bounce back. The mechanic turns Wario into a wrecking ball with legs, constantly fixed in the attacking state, without any lapses in animation. Thus it's ideal for removing long sets of horizontally-aligned enemies and blocks.

Four weaknesses balance out the advantages.

It takes a moment for Wario to charge the mechanic and enter the attacking state. This leaves him running forward, open to being knocked.

1. The skid on ending the mechanic can be difficult to factor into play.
2. DASH ATTACK'S consistent fast speed makes objects come into view quicker and thus more stress is placed on the player's reaction skills.

3. Without significant horizontal leeway to build a run-up, the player can't charge up the mechanic. This makes DASH ATTACK dependent on available space.

The strengths come at a cost, making DASH ATTACK a high committal mechanic with strong risk and reward.

SMASH ATTACK AND HEIGHTENED SMASH ATTACK

SMASH ATTACK is a vertical take on ATTACK, with DASH ATTACK functionality built in. SMASH ATTACKING the ground causes a quake, flipping enemies and knocking loose objects about. SMASH ATTACKING an enemy's weak point or a regular block destroys it. The player can cancel the animation shortly after it begins, however, after a set window of time, Wario's locked into the mechanic until he hits the ground. After SMASH ATTACKING some distance, the mechanic builds charge and becomes a HEIGHTENED SMASH ATTACK. The extra force allows Wario to break thick blocks and smash attack through water.

There are two forms of quakes: level 1 quakes (SMASH ATTACK) and level 2 quakes (HEIGHTENED SMASH ATTACK). Level 1 quakes cause enemies to jump and loose level elements (eg. rocks) to bounce around. Level 2 quakes cause enemies to become paralysed and bounce around with the loose level elements.

The quakes occur during the vertical bounce back, when Wario's hat is bouncing up and down, allowing the player to see the result of their actions. This is also true of Fat Wario who instead remains stationary during the quake.

PICK UP, THROW AND CHARGE THROW

THROWING is a stalwart mechanic of the *Wario Land* series. When Wario WALKS into a projectile lying on the ground, he automatically PICKS it UP. CROUCHING drops the held object. THROWING, B and the d-pad, can be an attack, a means of transporting an object, or a way to clear a path through a channel of unit-high blocks. Holding B for a short time charges the THROW. A CHARGE THROW sends the projectiles further than a regular THROW, and is more engaging as it involves a timing element.



As the Mr. Game and Watch sign demonstrates, the trajectory of Wario's vertical throws slant in the direction he's facing. This is particularly noticable with a CHARGE THROW. The player can minimise the skew by shortening the distance between Wario and the target by JUMPING and THROWING.

Holding an object allows Wario to safely deliver it from one area to another. Since Wario holds projectiles above his head, they add to his height, something which the player must consider when moving him. If Wario is knocked, he'll drop what he's holding. If the object is knocked, it'll fall out of his hands.

Heavy projectiles can't be thrown as far as regular projectiles.

ROLL

ROLL is tied to slopes, which restricts its role as an attack mechanic, but gives me the freedom to make subtle puns.

FORWARD STROKE

FORWARD STROKE is the only swim mechanic which can attack horizontally, however, because it can't break blocks, it can only be used to attack Goggle-Blades when they swim vertically. A feature made useless by the fact that the fish predominately moves horizontally, thanks to the layout of underwater areas.

UPWARD STROKE

UPWARD STROKE attacks vertically *and* breaks blocks. The mechanic persuades the player to get Wario underneath enemies and blocks to attack them. Perhaps the reason for not being able to break blocks with the FORWARD STROKE is to encourage the player to use the UPWARD STROKE and engage with the buoyancy dynamic (Wario's float).

Because:

- » FORWARD STROKE can clear enemies, but not blocks.
- » UPWARD STROKE can clear both.

- » FORWARD STROKE can effectively become an UPWARD STROKE (without the ability to jump out the water), but an UPWARD STROKE can't become a FORWARD STROKE.

The two mechanics imperfectly blur into one another. At least for me personally, this has always made the swimming mechanics feel a bit nebulous.

JUMP MECHANICS

Jumps are *the* mechanics for interacting with the essence of the side-scrolling platformer, gravity. Unlike the traversal and attack mechanics, the jump mechanics are all variants of the same core function. For this reason, I introduce them with a bit more detail.

JUMP

Combination: JUMP

Pros: Steep ascent and descent, no bounce back

Cons: Lacks horizontal distance, can't attack enemies, little slow

Use: Standard leaps, quick jumps, jumping in tight areas, dodging horizontal attacks

JUMP has steeper ascent and descent than the other jumps, which makes it ideal for clearing tall obstacles with limited reaction time, like the boulders in Fiery Cavern. The longer the player holds the A button, the higher Wario's jump. JUMPS in which Wario reaches maximum height are called full JUMPS. By pressing left or right on the d-pad, the player can direct the trajectory of the jump and fall. There's no bounce back when hitting walls. JUMP offers quick ascent, control of Wario in mid-air, and can be scaled to various heights. These advantages make it the safest, most reliable jump mechanic.

STOMP JUMP

Combination: JUMP and an enemy or projectile

Pros: The highest jump in the game

Cons: Limited to availability of an enemy or projectile

Use: Reaching secret areas

Enemies and projectiles can be used as a springboard to perform a STOMP JUMP. The bounce lifts Wario half a unit higher than a full JUMP, but execution depends on the availability of an enemy or projectile. This can lead to some interesting cases of suspension, where the enemy/projectile needs to be moved to

an out-of-the-way location and STOMP JUMPED on to reach a secret area. I pair STOMP JUMP together with JUMP.

CROUCH JUMP

Combination: JUMP and CROUCH

Pros: Can jump into raised, unit-high passages

Cons: Only half the height of a full JUMP

Use: Entering raised, unit-high passages

CROUCH JUMPING allows Wario to jump into raised, unit-high passages at the expense of height. The form dictates the function.

CROUCH STOMP JUMP

Combination: CROUCH JUMP and an enemy or projectile

Pros: A higher CROUCH JUMP

Cons: Not as high as a STOMP JUMP

Use: None

Unit-high passages are never so high off the ground to warrant use of this mechanic. I pair CROUCH STOMP JUMP together with CROUCH JUMP.

ATTACK JUMP

Combination: JUMP and ATTACK

Pros: Can attack enemies and blocks above Wario, good horizontal distance, can cancel the mechanic quickly and easily

Cons: Bounce back, fixed trajectory

Use: Short jumps, jumping with precision

An ATTACK JUMP is initiated by JUMPING during an ATTACK. It has slightly better horizontal range than JUMP and all the properties of an ATTACK (animation cancels, nippy response time, and immediate entry into the attacking state). The ATTACK determines the jump's fixed trajectory.

Being able to end an ATTACK JUMP in mid-air changes the process of jumping from guiding Wario with the d-pad to waiting until he's vertically aligned with a platform and then cancelling the jump so that he falls directly onto it. For precision jumps, this new approach is ideal.

DASH ATTACK JUMP

Combination: JUMP and DASH ATTACK

Pros: Can attack enemies and blocks above Wario, the best horizontal distance

Cons: Requires a run-up, can't control the jump at all, bounce back

Use: Speed running, clearing large gaps

As with DASH ATTACK, DASH ATTACK JUMP has high risk/reward. Wario can make larger jumps (with a lower arc), but can't cancel the animation or change the jump's trajectory mid-jump. DASH ATTACK JUMP also requires a run-up, which limits its potential use.

ROLL JUMP

Combination: JUMP and ROLL

Pros: Can jump in the rolling state

Cons: Limited to the rolling state

Use: Avoiding obstacles in the rolling state

When ROLLING, Wario can ROLL JUMP. As he's only a unit-high and moving at a fast speed, the jump's trajectory is low and wide. ROLL JUMP'S limited height shortens the window of time Wario has to jump to another platform. This exertion of reflex, along with the fast speed of the rolling state, makes ROLLING a tense affair.

TRANSFORMATIONS AND NAVIGATION



"All of my reactions [transformations] are very important to this game, but to me, they're a real pain!! SO, if you are a true Wario fan, you will try to finish this game without letting ANY of this happen to me!! RIGHT?! Come on! Please, I'm counting on you!"

- Wario, page 36 of the Wario Land 4 instruction booklet

Transformations, like any core part of a well-designed game, serve multiple functions. They work with the level elements to create isolated puzzle and navigational challenges, which add variety and narrative weight to a level. They punish the player when inconvenient and allow them to experience Wario's self-deprecating nature firsthand through interaction. More than any other part of the Need to Know chapter, this section contains analysis as opposed to just important insights. Without analysis, we can't understand the fundamental workings and engagement of these unique states. With this in mind, let's begin.

A HISTORY OF TRANSFORMATIONS

Super Mario Land 3: Wario Land features hats, power-ups found in blocks, which grant special abilities. In *Wario Land 2*, hats were replaced with transformations, which became the basis for the series's shift to puzzle platforming. Although hats and transformations achieve the same outcome, alter Wario's state and add new abilities, hats are presented as power-ups that Wario takes advantage of, whereas transformations are presented as status effects that enemies inflict upon him. Nintendo's R&D1 studio used this difference to display Wario in a less than flattering light and

subsequently inject more humour into the series. *Wario Land 3* added new transformations and tweaked the pre-existing set. *Wario Land 4* cut the list to ten and reworked them so that they would be better suited to the navigational challenges then made possible with the Game Boy Advance's increased screen resolution, accommodating the game's action platforming bent.

THE DIFFERENCE BETWEEN TRANSFORMATIONS AND MECHANICS

Mechanics are functions that the player can use in the game. Because Wario is the player's avatar, the mechanics can be thought of as Wario's abilities. Although there are a handful of mechanics unrelated to Wario, such as pausing the game. Transformations are temporary states, like recoiling or being underwater, which modify Wario's properties and mechanics. They are dependent on external requirements.

For example, Wario becomes Flaming Wario when set alight by the lamp-like Kaentsubo (the requirement). Once Flaming Wario makes contact with a wall three times (the limitation), he'll combust, burn out into soot and shake himself back to normal. Flaming Wario can run (modification of WALK) and, once he combusts, break fire blocks (modification of Wario's properties) for a short time (the limitation).

CONSIDERATIONS

Levels are made up of arrangements of game elements which elicit interaction and create narrative. For example, a platform with an enemy on top. Arrangements are dependent on mechanics and game elements. There's no point having a level full of platforms if the avatar can't jump onto them, and you can't add platforms to a level if there are, ahem, no platforms in the game. *Wario Land 4* has a strict set of appropriate game elements. Therefore, the only way to increase the possibility space of gameplay and story is to add mechanics—or alter the avatar's properties, which is similar to adding mechanics. The transformations do both. Their role is to broaden the game's breadth and provide variation.

There are ten transformations, although this doesn't mean that the possibility space is expanded tenfold. Transformations are simplified versions of Wario, reduced to a single function/concept. They disable most of his mechanics, modify what's left, and sometimes add their own. This way, each transformation is specialised and unique from regular Wario, increasing the potential for gameplay without adding needless complexity. Their form fits their function as well, which reduces the effort involved in understanding and remembering the transformations, their properties and abilities.

Wario's mechanics are de-optimised so as to make him engaging to play as. For example, he can only ATTACK JUMP at a fixed arc which makes removing enemies higher than himself engaging as the player must work around the controlled trajectory. The de-optimisation makes applying the mechanics similar to a puzzle. This is also true of the transformations, however, the rebalancing tends to be more extreme so as to make each transformation further distinctive and accentuate certain wrinkles of engagement. For example, Bouncy Wario can spring jump vertically until he hits a ceiling (optimal vertical movement), but slowly hops left and right (de-optimised horizontal movement) and reverts to regular Wario after a short time (de-optimised state). The limited time to move Bouncy Wario to where he'll spring jump from and the clunkiness of his horizontal movement makes controlling him engaging.

Interaction gives meaning to game elements. Since it is the avatar who interacts with the game elements, it is the avatar that defines them. When the avatar changes, so does the game world. For example, platforms maintain a point of verticality. Zombie Wario, however, falls through them, therefore changing the role of platforms. When the player can control the avatar's state, as is the case with the transformations, they can constantly redefine the game elements and must therefore adapt to the fluidly changing state of game world. If transformations give the player new lenses to see the game world, then switching between them requires continuous recalibration of perspectives.

Much of the humour of the *Wario Land* games comes from the transformations. Video games tell stories through functions set in context, and Wario's transformations provide the context (the visual form, sound, game feel, and animations) and functions (interactions) which allow the player to experience the series's signature self-deprecating humour firsthand.

Contextually speaking, despite Wario's objection to transformations, his loss of face is inevitable given that the player wishes to complete the game.

Transformation devices, the game elements that allow Wario to transform, are sometimes placed away from transformation-specific arrangements so as to unnecessarily change Wario's form and slow the player's progress. In these examples, the transformation devices become obstacles as opposed to entry points to interaction.

Seven of the ten transformations are initiated by enemies. Flat, Snowman, and Bubble Wario are prompted by level elements like crushers, drops of snow, and cracks of air underwater.

When the player sees the transformation devices, they consider the respective transformation and look for the game elements that Wario can

interact with once transformed. The transformation devices prompt the player to find the transformation's interaction elements and strategise ahead. For example, when the player sees a Ringosuki, they think of Fat Wario and then look for the nearest thick block. Ringosukis become the visual prompter for thick blocks.

Wario Land 4's arrangements use a lock-and-key design where the player needs to move the key to the lock. With the transformations, Wario often becomes the key. For example, a thick block in the ground is a lock and Fat Wario, who can remove the block and open access to the subsequent area, is the key.

Of the ten transformations, four of them can alter the environment. Flaming Wario can destroy flame blocks, Snowman Wario can clear snow blocks, Fat Wario can crush thick and regular blocks, while Bouncy Wario can remove regular blocks.

There are three types of restrictions imposed on the transformations: cures, contacts, and timers. Zombie, Vampire Bat, and Flat Wario are limited by cures, game elements that revert Wario back to his neutral state. For Zombie and Vampire Bat Wario, water and light are cures. For Flat Wario, water and decompressors are cures. Flaming Wario is limited by cures (water) and time (after bursting into flames). Puffy, Bubble, and Snowman Wario continuously move horizontally or vertically until they touch a wall or ceiling and break out of the transformation. They are examples of contact reversions. Frozen Wario's state is determined by contact and cures (water). Bouncy Wario is governed by a timer and, once in a spring jump, by contact with a ceiling. Fat Wario is an anomaly as he only reverts to the neutral state after walking a set number of units. This can be thought of as a player-controlled timer.

If a transformed Wario touches an enemy, he'll either push them aside or destroy them on impact. As a design rule, enemies are absent or out of the way in transformation-specific arrangements, as they only create clutter.

OVERVIEW

Now that we understand the transformations a little better, we can analyse them individually to discover how they modify Wario's properties and mechanics to create engaging new ways to navigate space. For each transformation, all existing mechanics are disabled unless stated otherwise. The four key points under each heading cover the introduction, while I discuss the engagement and any other quirks in long-form.

Modification: WALK is slower, JUMP is shorter and of a fixed height, Wario is larger, falls faster and quakes the ground when landing (level 2)

Transformation Elements: Ringosuki

Interaction Elements: Switches, thick and regular blocks, breakable terrain, water

Restriction: Walking distance

When Wario touches a Ringosuki's apple, he enters his obese form, Fat Wario. Because Fat Wario's walking distance is limited and Ringosukis are usually some way from the lock, the player is often tasked with deducing the shortest path from the Ringosuki to the lock. To do so, they must interpret the game world as constructed of units, commodify Wario's steps, and estimate his potential walking distance before deciding on a route. The player must also factor in Fat Wario's unit-high jump and ignore other game elements vying to lead them off track.

The lack of visual leeway below Wario makes dodging objects during a fall quite reflex-intensive. Fat Wario's weight causes him to fall faster, further stressing reaction skills.

Fat Wario destroys enemies on impact which is both a strength and a weakness. A strength, because he can easily reel in spoils from large, concentrated groups of enemies. A weakness, because he can easily remove enemies needed to advance through the level. Fat Wario's role is malleable to the game elements surrounding him.

Unlike the two smash attack mechanics, Fat Wario's (level 2) quake doesn't see enemies and loose level elements bounce in the direction he's facing. Rather, they randomly bounce back and forth.

The Ringosukis throw their apples into the air. If Wario touches the fruit in mid-air, he'll fall while eating it, land, and then transform. Yet, if he enters water as he falls, he'll transform immediately, hitting the ground with a quake. This added nuance to the transformation process extends the potential range of Fat Wario-specific arrangements.

Modification: Wario constantly ascends, his head inflates to twice its original size, a push float mechanic is added

Transformation Elements: Beezley, Bow Balloon

Interaction Elements: None

Restriction: Contact with ceiling or spikes

Puffy Wario floats upwards, like a balloon, until he hits a solid object and exits the transformation. The pace of his ascent gives the player sufficient time to weave around the spikes, solid platforms, and low ceilings. Because Puffy Wario rises at a fixed speed and the obstructions remain stationary, the time at which the two objects meet is fixed. The player therefore has a set time limit to steer Wario around the obstacles. It's this restriction that creates engagement.

Moving Puffy Wario horizontally sees the air balloon continue to drift in its given direction. If left unattended, Wario can easily oversteer his way into trouble, so the player must micromanage the drift. This is the second form of engagement.

Puffy Wario's inflated head is 2 units-wide. More concentration is therefore needed to safely guide him through narrow spaces. This is the third form of engagement.

After Puffy Wario deflates, he falls to the ground. If the player's not careful though, Wario may land on a hazard. So, as they're controlling Puffy Wario, the player must constantly scan the environment for a convenient landing point and where to touch the ceiling so as to subsequently reach that point. That is, the player must think in one frame of mind while acting in another. A fourth form of engagement.

Puffy Wario's push float mechanic (press B to nudge him upwards) allows the player to scale the difficulty. By accelerating Puffy Wario's float, obstacles come into view quicker and greater reflex skills are needed to avoid them. Since the boost is short and portable, and the player can hold the button longer for the full animation, the player has a high level of control over the degree at which they scale the task. The push float mechanic also allows the player to remove the negative space when Puffy Wario's floating and they have nothing to do, but wait for him to reach his destination.

Modification: Wario is smaller, grows wings, and can flap them to stay afloat

Transformation Elements: Minicula

Interaction Elements: Ground

Restriction: Light or water cures

As a bat, Wario's body shrinks and sprouts wings. The wings give the player a new means to engage with gravity, press the A button to keep Vampire Bat Wario afloat. The longer the button is held, the stronger the flap and higher the ascent. Shorter flaps allow for more precise control of Wario's vertical position, but require faster button presses, while longer flaps offer quicker ascent in exchange for harder button presses. Feeling out this relationship between input and output and determining when to flap and to what degree makes controlling Vampire Bat Wario, you guessed it, engaging.

Holding left or right on the d-pad moves Vampire Bat Wario in the respective direction. Navigating Wario therefore requires that the player do two different actions at once: slide their finger around the d-pad and rapidly press the A button. Engagement is created through ambidexterity.

Of all the transformations, Vampire Bat Wario gives the player the most control over both axes. As a result, the camera is its most mobile when the transformation's active.

The flapping input is quite strenuous which fits with Vampire Bat Wario's visual form suggesting that his large head weighs him down.

When Vampire Bat Wario touches the ground, he can no longer move horizontally and helplessly flails on the spot.

The transformation also has the player consider light sources and their effect on the formation of various flying routes.

FLAT WARIO

Modification: Wario takes the shape of a pancake, his WALK is slower, JUMP is short and of a fixed height, falling sends him swinging horizontally

Transformation Elements: Crushers

Interaction Elements: None

Restriction: Water or decompressor cures

The Flat Wario transformation sees the antihero squashed into a pancake, half a unit tall and 2 units wide. Thanks to his elongated form, he can waddle across unit gaps.

Flat Wario's fall sees him sway sharply in broad sweeps, mimicking a leaf's descent to the ground. The player can control whether he sways to the left or right through the d-pad. Each swing drops Wario a fixed number of pixels, which makes them measurable units. The core engagement comes from determining how many swings, and in which direction(s), are needed to send Flat Wario to his destination. His jump adds an extra wrinkle to this process as the increased height is helpful for clearing long distances, but can also lead him to overshoot a platform.

After jumping once, Flat Wario floats to the left. After jump a second time, Flat Wario floats to the right. That is, given the player doesn't press on the d-pad.

BOUNCY WARIO

Modification: Wario bounces on the spot which makes horizontal movement slow (bouncing state), can spring jump upwards through regular blocks until he hits a ceiling (spring jumping state)

Transformation Elements: Menhammer

Interaction Elements: Regular blocks

Restriction: Timer when bouncing and contact with ceiling when spring jumping

Bouncy Wario sacrifices ease of horizontal movement for ease of vertical ascent. The transformation has two states: bouncing and spring jumping. Because the position Wario should spring jump from to reach his destination (the spring point) is usually some distance from where he transforms, the player must first move Bouncy Wario to the spring point and then jump. Since the initial bouncing state is governed by a timer and horizontal movement is slow, due to Bouncy Wario's continuous hopping, the player needs to think

fast and react early if they want to get Wario into position before he exits the transformation. The prompt reaction that the transformation elicits from the player is its core engagement.

The fast ascent of Wario's spring jump makes it hard to displace him horizontally mid-jump (i.e. the speed gives the player little time to cover much distance). The player has minimal leeway to adjust Wario's trajectory once he's set in motion, and thus the onus is on them knowing where to spring jump from before they spring jump. The bouncing state's timer also encourages the player to know beforehand as once Wario transforms, they don't have long to make up their mind. These properties enforce and accentuate the transformation's most engaging feature.

Similar to moving Wario to the spring point in the bouncing state, shifting him horizontally when spring jumping is also engaging because of the limited time.

Because the spring jump keeps going until Bouncy Wario hits a ceiling, the destination is usually far from the spring point, eliciting prior investigation.

As Bouncy Wario, in his bouncing state, approaches the end of his timer, he flashes. If he then spring jumps, Wario will continue to flash until he exits the transformation.

ZOMBIE WARIO

Modification: WALK is slow, JUMP is short and of a fixed height, Wario can fall through through platforms

Transformation Elements: Skeleton Bird

Interaction Elements: Through platforms

Restriction: Contact with light or water

Similar to Fat Wario, Zombie Wario offers new ways to navigate the game world without significantly modifying Wario's command of the vertical axis. By changing his relationship to platforms, water, and light, elements common in many arrangements, deducing the path from Wario's transformation point to his destination becomes a puzzle.

Zombie Wario's slow movement, which can consume a lot of time, persuades the player to get enough information on their surroundings before they transform. This is not unlike what I just talked about regarding Bouncy Wario.

Wario can transform into Zombie Wario in mid-air, unlike Fat Wario who only transforms once he touches the ground or water. This property plays to Zombie Wario's ability to fall through through platforms and persuades the player to be wary of Skeleton Birds as Wario jumps.

SNOWMAN WARIO

Modification: WALK is slow, JUMP is shorter and of a fixed height, Wario quakes the ground when landing (level 2), ROLLING down slopes sees Wario roll up into a snowball where he can break snow blocks

Transformation Elements: Clumps of snow

Interaction Elements: Slopes, snow blocks

Restriction: Contact with a wall after rolling down a slope

Snowman Wario has two states. At first, Wario's a snowman with legs who can only walk and jump. After standing on a slope, however, he slips and begins to snowball, increasing in size and clearing any snow blocks in his path.

In the snowman state, Snowman Wario is Fat Wario with unlimited walk. With no restriction on movement, the emphasis is shifted to Wario's unit-high jump. Plotting the route from transformation to slope requires the player consider the height of the environment. This is another take on Fat and Zombie Wario's core engagements.

In the snowball state, the player has no control over Wario. Foreseeing where the slope will lead him, before rolling, is the second form of engagement.

When the arrangements call for it, mentally connecting the path from the transformation point to the slope and then the slope to the snow blocks increases the necessary knowledge skills (observation and short term memory).

Without snow blocks, there'd be no use for Snowman Wario.

Snow blocks and the Snowman Wario transformation build on the process of ROLLING through a line of unit blocks by front-loading it with three additional steps: look for the clumps of snow, transform, and move Snowman Wario to the slope. By separating the game elements needed to complete each step, the game designers can flesh out the rolling arrangements. For example, if the slopes and clumps of snow are at opposite ends of a room, the player needs to navigate Snowman Wario from one end to the other, before they can roll.

BUBBLE WARIO

Modification: Wario constantly rises and has limited horizontal movement

Transformation Elements: Cracks of air that form bubbles

Interaction Elements: None

Restriction: Contact with a ceiling or the water's surface

If Wario gets caught in a bubble underwater, he becomes Bubble Wario. Left untouched, Bubble Wario sways left to right until he hits a ceiling or the water's surface. The player can use the d-pad to steer the sways. The transformation only acts to get Wario past currents or catch the player off guard and punish them. There's minimal engagement.

FLAMING WARIO

Modification: WALK becomes a nonstop run, JUMP is longer, Wario can break fire blocks

Transformation Elements: Kaentsubos, Pig head statues, chandeliers

Interaction Elements: Fire blocks

Restriction: In his first state, contact with a wall three times; in his second state, time

Flaming Wario has two states. Initially, he just runs around with his pants on fire. Each time he touches a wall, the flames grow larger and change from blue to green to orange. After three wall touches, Wario combusts into a ball of flames where he can break fire blocks before returning to his neutral form.

As with most other transformations, Flaming Wario's transformation elements are usually separated from his destination, the fire block, so that, in bringing Flaming Wario to the fire block, the player must engage with the transformation's unique quirk, the three touch rule. That is, the player must plot Flaming Wario's path around three wall touches so that he hits the third wall near the fire block, combusts, and enters the second state where he can then remove the block. The player can't control Flaming Wario's direction in the first state, he runs in whichever way he's facing and only turns around after hitting a wall. This adds an extra layer of consideration to the route planning.

Flaming Wario's run quickly brings platforms (and other game elements) into frame, shortening the window of time to jump from one platform to the next. The tests of reflex inherent to the transformation are another form of engagement. Where the three touch rule adds a puzzle element, the run

adds an action element. The two properties complement each other as the run persuades the player to plot Wario's path before he transforms, since it's difficult to control him and determine the best way forward at the same time.

In Flaming Wario's second state, after he combusts, the engagement shifts to moving the character to the fire block within the time limit. This is akin to Bouncy Wario's first state.

The ceilings don't count as wall touches.

FROZEN WARIO

Modification: Wario becomes frozen and glides backwards, the player loses all control

Transformation Elements: Yukiotos

Interaction Elements: None

Restriction: Contact with a wall or water

Yukiotos are yeti-like creatures which blow ice breath projectiles that transform Wario into Frozen Wario, a horizontally-inclined Bubble Wario. The player can take advantage of Frozen Wario's glide to direct Wario into otherwise out-of-reach areas. Lining up the Yukiotos with the destination is the core engagement.

There are two external factors which increase engagement. The first is gravity, which forces the player to factor height into Frozen Wario's sliding path. The second is that Wario can manually move Yukiotos, which allows the player to determine Frozen Wario's starting point, adding an element of strategy to the process.

Since the player has no control over Frozen Wario, there's nothing engaging about using the transformation. All the interesting stuff happens before Wario transforms, in the player's head. This is the reason why Wario glides quickly, to minimise negative space.



What's this? There's no magic carpet transformation?! Indeed, there isn't. The magic carpet is a level element from Arabian Nights which allows Wario to take to the skies. Like the transformations though, it offers the player a unique way to navigate space. So it seems only fitting to discuss it here.

In Arabian Nights, most rooms have at least one magic carpet. When Wario steps off a carpet, the rug rises into the air and slowly falls to the ground. So, if Wario walks over a rug, it'll flutter up behind him as he steps off. Alternatively, if Wario jumps off the rug, it'll undercut his jump, catching his fall. The player can then continue to jump to lift Wario higher and higher into the air. The rug falls in the direction Wario faces.

The magic carpet is similar to Vampire Bat Wario. Vertical movement is controlled by pressing a button and horizontal movement through the d-pad. However, the player doesn't need to button mash to keep Wario afloat, nor do they have to hold down on the d-pad to change his direction, a quick press is suffice. Because the inputs are slightly different, so too is the engagement. The player still needs to operate in two frames of mind as to controlling Wario's movement across the two axes, but less dexterity is required. Since the rug's horizontal movement is automatic, like Puffy Wario, it's easy to oversteer, prompting the player to constantly micromanage the direction Wario faces. Similarly, because the rug constantly descends, the player must also micromanage Wario's jumps so as to keep him afloat. Since Wario can control the height of the jump and the arrangements generally require some command over height, the length of button press becomes the focal point of this second form of micromanagement. The primary engagement therefore comes from independently managing the two forms of input over the two different axes so as to move Wario to his destination. That is, doing two independent activities simultaneously.

When the magic carpet's in the air, Wario can't walk off the rug, he's forced to stay on it until it touches the ground. (Unless, of course, he jumps off). This ensures that the player doesn't accidentally push Wario off the rug when changing directions to steer. An indirect consequence of this safety measure is that Wario can DASH ATTACK on the spot, at the end of the rug, running off

the carpet when it touches a wall or floor. The one caveat being that because the rug falls in the direction Wario faces, Wario can't change his direction mid-DASH ATTACK, and the rooms in Arabian Nights aren't terribly wide, most of the DASH ATTACKS off the rug lead directly into the nearest wall.

Wario bounces on the rug when he SMASH ATTACKS it. Hold A and he STOMP JUMPS.

The player must be careful not to drop the rug in water or leave it in a position that Wario can't reach.

SWIMMING

Speaking of water, swimming is another form of navigation, the most significant outside of Wario's neutral state. It takes Vampire Bat Wario's horizontal and vertical movement and fleshes them out into two separate systems, while introducing a new form of engagement.

Vampire Bat Wario

Horizontal Movement - Slow Swim
Vertical Movement - Upward/Forward Stroke
Precision Movement - None
Dynamic - Gravity

Swimming

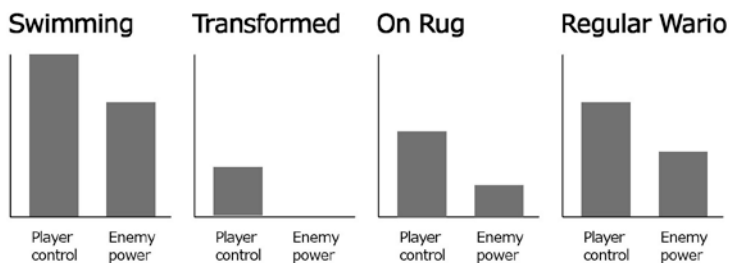
Horizontal Movement - Forward Stroke
Vertical Movement - Upward Stroke
Precision Movement - Slow Swim
Dynamic - Buoyancy

Vampire Bat Wario moves vertically by flapping his wings, the longer the button press, the higher the ascent. This is true of the FORWARD and UPWARD STROKES in regards to their respective axes. To move Vampire Bat Wario horizontally, the player must press and hold down on the left or right arm of the d-pad. This is also the case with SLOW SWIM, which allows Wario to move vertically as well as horizontally. The FORWARD and UPWARD STROKES (combined) and SLOW SWIM give the player a choice between speed and precision.

Buoyancy replaces gravity as the core engagement. The dynamic sends Wario upwards, making it an inversion of gravity. The pull, however, is much weaker and only affects Wario when he's idle or in recoil. The influence of buoyancy is therefore downplayed. Where the player must constantly engage with gravity on land, they can swim underwater without paying any attention to buoyancy, granted that they swim without stopping. The engagement comes from managing Wario's unsuspecting displacement in the downtime between strokes.

The reason why buoyancy is downplayed and the swimming mechanics offer a high level of control is because Wario must deal with enemies underwater. When transformed or on a magic carpet, it's the opposite: enemies pose little to no threat and Wario's mobility is limited. The difference between swimming

and the other forms of navigation is in the increase of player control and enemy power.



Notice how in all 4 bar charts the disparity between the player's control and the enemies' power is consistent? This gap is the game's difficulty. Buoyancy would only weaken the player's control of Wario and make the swimming sections disproportionately more difficult than the rest of the game. Swimming, however, is more challenging by virtue of the player having more power and more to do with that power. That is to say, they have more to think about than the transformations which are governed by a handful of rules and mechanics.

Underwater, both parties have greater control over the space between them. Thus, what ultimately makes swimming engaging, and unique from other forms of navigation, is the higher level interplay with the spatial dynamic.

Like Mario, Wario is blessed with incredible lungs that allow him to swim underwater for an infinite amount of time without the need for oxygen.

LEVEL ELEMENTS

ESSENTIAL ELEMENTS

REGULAR ELEMENTS

EXCLUSIVE ELEMENTS

Level elements are the building blocks of a level. They facilitate interaction through the game mechanics. Put a few of them together and you have yourself an environment for the avatar to play around in.

I've broken level elements into three categories: essential, regular, and exclusive. Essential level elements are necessary to the functioning of a level. Regular level elements are present in most levels. Exclusive level elements are restricted to a single level or a handful of them, some people might call these gimmicks.

ESSENTIAL ELEMENTS

As we did with the game elements, I want you to first think of the essential level elements for yourself and then check your answers. There are six in total. The screenshot below offers a few clues.



I haven't included obvious elements such as the ground, walls, rooms, doors, divides, and pipes as they're rather self-explanatory. Except that all pipes are vertical and straight, and divides between rooms are marked with low ceilings.

VORTEX

Purpose: An entry and exit point to the level

Vortexes warp Wario out from the passages of the Golden Pyramid and into the paintings on the walls (the individual stages). Before each level, a cutscene shows Wario stepping on a frog switch to open the vortex. As Wario enters the level, the environment is frozen, springing to life once he falls from the closing portal. This minor detail helps strengthen the connection between the still painting and active game world. The only way to re-open the vortex and exit the level is to find a frog switch, as established in the initial cutscene. Every time the player enters a level, they're reminded of the folded level design. Only Wario can enter the vortex. The player can't throw rocks into the black hole, for example.

FROG SWITCH

Purpose: Facilitate tension and folded gameplay

The frog switch doesn't just open the vortex, it defines the tone of the second part of the level, the post-fold. Each frog switch is rigged to a bomb. If Wario doesn't exit the level in time, his coins drain until he's out of money and kicked out the stage. For some reason the bomb never explodes. It's just a ploy.

The frog switch can also awaken enemies, activate certain level elements, redirect Wario through new rooms, and cause an environmental overhaul. So where the timer adds tension, the changes to the level subvert the player's understanding of its construction, culminating in a tense second act.

Transformations are rarely in vicinity of the frog switch. When they are—like in Palmtree Paradise, with Fat Wario—Wario can't reach the frog switch in his transformed state.

FROG BLOCKS (AND FROG LOCKS)

Purpose: Open and close access to certain areas so as to create routes exclusive to pre- and post-fold

The majority of the frog switch's alterations are played out through frog blocks. These blocks usually cover various pathways which the frog switch either opens or closes, like point blades on a railroad switch changing the path of the train. Frog locks are similar to frog blocks, but prevent the player from entering doors.

KEYZER

Purpose: Make the player an active explorer, facilitate level progression

The Keyzer is a sleeping ghost floating dormant in each level. When Wario touches the Keyzer, it wakes up and accompanies him back to the passage where it uses its key nose to open the door to the next stage. If the player misses the Keyzer, they can't open the door to the subsequent level and must therefore repeat the last stage to find him. Being a ghost, the Keyzer isn't affected by other game elements. The exception being Yurei from Crescent Moon Village who himself is a ghost. The Keyzer generally rests in plain sight, however, the player must constantly remain observant as they can be easily missed.

JEWEL PIECES

Purpose: Make the player an active explorer, facilitate passage progression

One could ignore the jewel pieces and still complete a level—this is true, however, without collecting them all, it's impossible to reach the passage boss. Assuming that players wish to complete the game, jewel pieces are essential level elements.

Four jewel pieces, spread evenly throughout each level, form a key which fits into one of the slots of a passage's boss room door. When all slots are filled, the player can proceed to the passage boss. So long as they explore most of the level, they'll more than likely stumble upon all four pieces. In this way, the jewel pieces encourage the player to be observant of their surroundings, as missing just one quarter means replaying the entire level to retrieve it.

MUSIC CD

Purpose: To facilitate scalable difficulty

Music CDs, hidden in each level, are secret rewards for exploration. Unlike jewel pieces and the Keyzer, music CDs are optional elements which present the choice of deeper engagement. The CDs themselves are the same colour as the passage.

REGULAR ELEMENTS



Essential level elements, as fixtures of every stage, provide a reliable template that guides the player through the level. Regular level elements, exclusive level elements, and enemies elicit a set of interactions which, when put together, tell a narrative through their functions set in context. In this section, we look at the regular level elements, the primary building blocks of *Wario Land 4*'s level design.

PLATFORMS – THROUGH, SOLID, SLIPPERY, INDUSTRIAL, AND ON/OFF PLATFORMS

Purpose: To engage the player with the jump mechanics

Platforms are self-evident in a platforming game: they maintain the avatar's vertical position and have them engage with gravity through the jump mechanics. There are several types of platforms in *Wario Land 4*. Through and solid platforms are the two main variants. The former can be jumped through from underneath, the latter cannot. Distinguishing the difference is a case of form fits function. I've taken some screenshots of through and solid platforms, try to guess which is which. Answers are at the end of this section.



Slippery platforms (and floors) punctuate Wario's stops with a drift in the direction he was moving. The slippage gives the player another variable to factor into navigation, increasing their engagement.

Industrial platforms are unit-wide platforms which move from left to right and have a propellor underneath to stay afloat. Their movement and limited size create risk, eliciting observation before the player makes a jump (knowledge). For some reason, Wario can't SMASH ATTACK the platforms.

On/Off platforms are thin platforms which fade in and out of existence. They're rarely used to much effect.

BLOCKS—REGULAR, UNIT, THICK, FIRE, SNOW, CONTEXTUAL, AND WEAK BLOCKS

Purpose: Empower the player by giving them something to attack, destroy, and reshape

Platforms may be a genre staple, but blocks arguably hold as much weight in *Wario Land 4*'s game design. They encourage the player to use the attack mechanics. Despite doubling as platforms, blocks are never used as such, as the player can remove them from play.

Blocks follow a similar psychological principle to coins in most platforming games. They're there, so why not go ahead and break them? Or, in the case of coins, collect them. Breaking a block may seem like a trivial interaction, but as a way of shaping the game world and asserting Wario's power—and your own—it's empowering. Think of how many times you've smashed up a few blocks just for the sake of it. I bet you weren't doing it for just a few piddly coins, right? (Although that plays into the psychology too). It just felt good.

Blocks allow us to express ourselves which is why we love them.

Blocks come in seven flavours. Regular blocks are 2 units high, 2 units wide and can be broken with any attack. Unit blocks are 1 unit high, 1 unit wide, but otherwise identical. They often conceal unit-high passages that Wario can ROLL or CROUCH WALK through. Thick blocks are 2 units high, 2 units wide and require a DASH ATTACK or HEIGHTENED SMASH ATTACK to break. Their darker colour distinguishes them from regular blocks.

Fire and snow blocks can be cleared by Flaming and Snowman Wario. Contextual blocks are regular blocks with a level-specific appearance, such as the crate boxes in Crescent Moon Village. Weak blocks are a sort of contextual block, functionally identical to regular blocks, but with a cracked appearance. They're spread in amongst terrain, breakable terrain, and regular blocks to create observation challenges in The Toxic Landfill.

BREAKABLE TERRAIN

Purpose: Conceal secrets hidden in walls

Some walls and floors are regular blocks in disguise, hiding secrets behind them. Why is it then that we don't attack every surface in pursuit of hidden treasure? Firstly, that would be insanity. Secondly, the game world uses visual clues to arouse a suspicion that players then act on. There's never a breakable chunk of terrain without a visual marker to accompany it. If there was, the game would condition paranoia. Instead, the visual markers teach players to look for discrepancies within patterns.

You can see some examples of breakable terrain in [Toxic Landfill](http://youtu.be/k5wsHZANR_M) and here: http://youtu.be/k5wsHZANR_M

WATER

Purpose: Change the way the player navigates space, allow use of the swim mechanics and presence of underwater enemies. That is, diversify play.

In water, buoyancy is the central game dynamic, as opposed to gravity. Water also brings with it the obligation of a suitable context, such as a tropical island or river.

WATER CURRENTS AND CONVEYOR BELTS

Purpose: Enforce contrary motion on land or in water

Contrary motion operates differently on land to in water. On land, Wario is bound to the ground area because of gravity. Contrary motion is therefore set along the ground, where it's most effective. This is the basic design premise for conveyor belts in platforming games. In water, Wario can move freely along both axes, so the concentrated area of play is much larger. The contrary motion therefore ought to be larger as well. This is the theory behind water currents.

Currents are much harder to avoid as they fill an entire area and have a stronger pull than conveyors, which can be jumped off to diminish their traction or avoided altogether with a well-timed jump. Their application reflects these properties. Wario's only ever required to swim perpendicular to the currents, grabbing crystals or turning off junctions, while he must cross the conveyors and sometimes jump between multiple conveyor platforms.

Coins and enemies aren't affected by conveyors, and the DASH ATTACK can't nullify their pull.

PROJECTILES—ROCKS, DR. AREWO STEIN, GLASS BALLS

Purpose: To attack enemies, clear blocks, and activate switch blocks

Rocks, Dr. Arewo Stein, and glass balls are the three unique types of projectiles¹. Rocks are impervious to Wario's attacks, but fly off-screen when touched by some of his transformations. Dr. Arewo Stein is a clichéd explorer-type Wario finds in puzzle rooms, the main hall, the Golden Passage, and some cutscenes. I call him "the prof" for short. Playing to *Wario Land 4*'s oddball humour, this character is also a projectile. Stein is functionally identical to rocks, except that he can break blocks underwater and is personalised with a series of strange voice clips.

Glass balls break when hitting a surface. The player must therefore be careful that Wario doesn't JUMP into a ceiling or gets bumped when holding the projectile. Despite breaking when they hit a switch block or wall, glass balls can somehow clear rows of unit blocks.

¹ Enemies can also be projectiles, but we'll cover them a little later.

GREEN BIRDS

Purpose: To spawn glass balls

Green Birds are large, chubby birds that spit out an endless supply of glass balls. Once one glass ball breaks, the bird spits out another. Green birds are only found in the purple pipe puzzle rooms. Without a level element to generate glass balls, Wario would have to manually exit and re-enter a room to respawn a glass ball every time one broke.

UNIT-HIGH PASSAGES

Purpose: Provide a reason to CROUCH JUMP and CROUCH WALK

Unit-high passages are tight channels, 1 unit tall, that Wario can only enter when in the crouched or rolling states. If the passage is raised off the ground, Wario needs to CROUCH or ROLL JUMP his way in. Unit blocks or breakable terrain filling the passage elicit the player to ROLL on through or CHARGE THROW a projectile to floss out the insides.

SLOPES

Purpose: A point of access to the ROLL mechanic, speed bumps to slow horizontal movement

Slopes are slants that Wario can ROLL down. They come in various sizes, with the smallest only a unit tall by a unit wide. Since slopes help Wario enter the rolling state, blocks and unit-high passages are often located nearby. In the case of Snowman Wario, snow blocks replace regular blocks. Marked with a snow ball icon, the blocks are put 1) far enough from the slope that Snowman Wario can build up a sufficiently sized snowball to break the block and 2) along the path following the slope, as Snowman Wario can't ROLL JUMP.

Because slopes need at least some height to function, they double as as small hills which slow Wario down by catching him on their slanted surfaces.

SWITCH BLOCKS, SOLID BLOCKS, BLOCK OUTLINES, AND SLOPE BLOCKS

Purpose: Flesh out arrangements

Switch blocks are switches that Wario can attack or jump at from underneath to turn block outlines into solid blocks and vice versa. Depending on their implementation, flicking the switch block may, for example, activate a bridge or remove a wall, granting access to a new area. Slope blocks are placed on each step of a staircase. When activated, they turn into right-angled triangles, transforming the staircase into a slope. Think evil lairs from Saturday morning cartoons and you've got the idea. Colour is used to distinguish pairs of switch blocks and block outlines/solid blocks/slope blocks.

These locks and keys add an extra step of interaction to their respective arrangements, having the player first activate the necessary level elements through the switches. Mini-arrangements can also be put between the switch block and block outlines/solid blocks/slope blocks to flesh out a single interaction, the flick of a switch, into a string of multiple interactions.

LADDERS AND MESHING

Purpose: Facilitate floor-based design and use of CLIMB

Ladders and meshing provide a means for Wario to move between floors. Since ladders are only a unit wide, Wario can't CLIMB horizontally along them as he can on meshing. Ladders are like through platforms in that Wario can walk past them, THROW projectiles through them, and stand on top of them. He can't, however, stand on meshing.

LIGHT SOURCES – LAMPS AND LIGHTS

Purpose: Make navigating space as Zombie and Vampire Bat Wario trickier, cures to the aforementioned transformations

Light sources revert Zombie and Vampire Bat Wario back to Wario's original state, and thus act as obstacles to be avoided when in one of these transformation states.

CONCEALED AREAS

Purpose: To make the player more observant

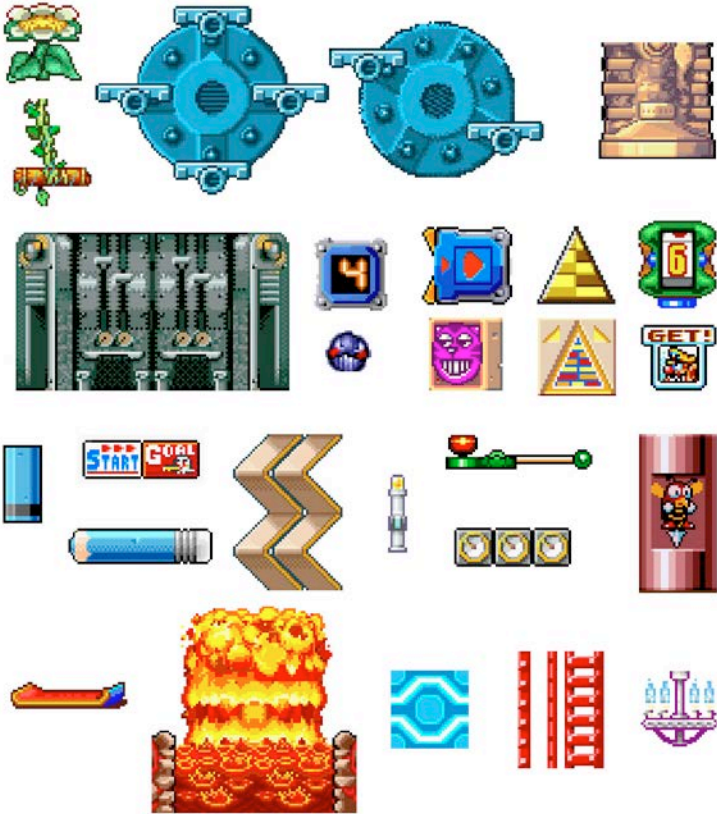
First pioneered in *Super Mario World 2: Yoshi's Island*, concealed areas are cut-off alcoves hidden behind a layer of texture. It's only when the player notices some visual clue from the outside and enters that the concealing texture lowers in transparency, revealing the hideaway and its contents. Rewards are usually placed inside to spur exploration.

You can see some examples of concealed areas in the reference².

Answers: 5,6,7,9,12 are all through platforms

² Examples of Concealment—http://youtu.be/8kergln_d1I

EXCLUSIVE ELEMENTS



Exclusive level elements are limited to a single level or a select few levels. They can develop a stage's core theme or just add functionality where needed. For example, Arabian Nights contains two exclusive level elements: the magic carpet and transformation tubes. The majority of arrangements involve navigating the magic carpet (core theme), however, one room uses the transformation tubes as keys to access the Keyzer (added functionality). The exclusive level elements are sorted by levels.

FLOWERS

Purpose: Umbrella Wario from Beezley attacks

Level: Wildflower Fields

Flowers shield Wario from Beezley's stinger attacks. If the bee misses Wario and hits the flower, its stinger gets caught in the flower's bud for a few seconds, leaving it vulnerable to attacks. After being stung, the flowers can wither up and be attacked for a few loose coins.

SWINGING PLATFORMS

Purpose: Increase timing skills in platforming

Level: Monsoon Jungle

Jumping from one platform to another is easy enough. Jumping from one *swinging* platform to another requires that the player wait for the two platforms to be in range before jumping.

WHEEL PLATFORMS

Purpose: Present different variations of platforming challenges

Level: The Curious Factory

Wheel platforms consist of four small platforms on a circular gear attached to a rail. To drive the wheel platform along the rail, Wario needs to step on either the left- or right-most platform. The level element divides a single jump into a series of multiple jumps. Thus, using the device is inherently risky as there are more chances for error. Because the player displaces the wheel, many interesting situations can emerge from the level design and respawning properties of the wheel. We'll explore these possibilities further in the Level Analysis.

ROTATING PLATFORMS

Purpose: Increase timing skills in platforming

Level: The Curious Factory

Rotating platforms are similar to wheel platforms, but only have two platforms and spin around independently, on the spot. Think of them as swinging platforms with a different movement pattern.

CRUSHERS

Purpose: Transform Wario into Flat Wario

Level: The Curious Factory

Crushers squish Wario into Flat Wario. Their lights shine red when attacking and blue when cooling. Once Wario is flattened, the machines stop operating.

DECOMPRESSORS

Purpose: Revert Flat Wario to the neutral state

Level: The Curious Factory

Decompressors return Flat Wario to his normal form.

PINBALLS, CATCHERS, AND MASTER LOCKS

Purpose: Get the player to practice the throwing mechanics and moving while holding an object

Level: Pinball Zone

Pinballs are projectiles. Catchers catch them. Master locks open after four pinballs have been thrown into catchers. Together these level elements create throwing exercises. The catchers have little orange nippers which open and close at fixed intervals, requiring the player to time their throws correctly. These nippers are akin to a hungry mouth, and communicate function through their likeness.

CAT BLOCKS

Purpose: To allow sequence puzzles

Level: Toyblock Tower

Cat blocks are blocks that respawn when Wario leaves and re-enters a room. Because the level element allows the player to undo fail states and Wario interfaces with it through the attack mechanics, cat blocks are used to create block-removing sequence puzzles. Cat blocks don't drop coins for obvious reasons.

SHAPE BLOCKS AND KEYHOLES

Purpose: Flesh out arrangements

Level: Toyblock Tower

Shape blocks and keyholes are a more literal representation of a lock and key than switch blocks and block outlines/solid blocks/slope blocks. With the latter pair, Wario needs to flick a switch. With the former, he needs to carry one object to the other. While both sets of level elements fatten arrangements with added interactions, moving the shape block to the keyhole is more engaging as the player must be careful not to drop the shape block and factor its jump-shortening weight into navigation.

DICE SWITCH, GAME BOARD, AND GET! SIGN

Purpose: Allow the player to participate in a meta-level board game, add a reflex-based lock on the arrangement

Level: The Big Board

The Big Board is designed around a board game. Throughout the level are dice switches cycling through the numbers one to six. When Wario's close to a dice switch, the game board appears on-screen. Hitting a dice switch stops the rotation and sees Wario move so many squares along the board. Each square has a different effect on the game world, such as spawning enemies or transforming Wario. These effects are needed to interact with the arrangements in each room, giving the player a reason to land on a particular square. The Get! sign shows them which square to roll for. The numbers rotate slow enough that the player can, with a little reflex, time the dice roll to get the number they're after.

POSTS

Purpose: Slow the player down, assist Yurei and Hoggus

Level: Doodle Woods and Crescent Moon Village

Posts can be found in Doodle Woods and Crescent Moon Village. What do these two levels have in common besides an abundance of wooden stubs? Hoggus and Yurei, flying enemies that threaten Wario from above. Posts require a full JUMP to hurdle over, temporarily holding Wario's horizontal position and thereby creating short, opportune instances where Hoggus and Yurei can swoop in and bother him.

PUSH PENCILS

Purpose: Add more interaction to platforming

Level: Doodle Woods

Push pencils are platforms stuck in walls that Wario can attack from one side to push it out to the other. This is another way for the player to unpack the arrangement.

FOLDY DOORS

Purpose: Open and close access to areas of a level

Level: Doodle Woods

As with frog blocks, foldy open up new routes post-fold.

DOMINO STARTERS AND ENDERS

Purpose: To create capsules of time-driven gameplay

Level: Domino Row

Most rooms in Domino Row have a file of dominos lined up on the background layer. Walking past a starter (gate) knocks the first domino, setting off a chain reaction. They continue to fall until the last domino lands on an ender (switch), which raises a flag. If Wario can raise the flag first, domino bricks concealing a secret area will be removed and the player can claim the rewards within. The enders drop spoils.

These devices together form races against the dominos, where Wario has to reach the finishing line in a limited time. The tension of the timer and prospect of a reward make the race engaging and worthwhile.

TIME-ACTIVE PLATFORMS

Purpose: To provide access to higher areas while the dominos are falling

Level: Domino Row

Time-active platforms are platforms which are only present as the dominos fall. The spinning clocks inside the platforms denote their relationship with time.

TRANSFORMATION TUBES

Purpose: To spawn transformation elements

Level: Arabian Nights

Wario spawns Miniculas and Beezleys when moving through transformation tubes. Think of them as yet another way to add a few interactions to the start of an arrangement. In its single application, the Miniculas and Beezleys are keys, and thus the tubes are key generators.

MAGIC CARPET

Purpose: A unique way to navigate space

Level: Arabian Nights

Magic carpets are platforms which ascend with Wario's jumps and float in the direction he's facing when he's on top. I often refer to the magic carpet as the "rug".

LAVA PITS AND GEYSERS

Purpose: To create dynamic risk and add a timing element to platforming

Level: Fiery Cavern

Lava hurts Wario when he touches it, so lava pits are obstructions that ought to be jumped over. Lava geysers, which rise out from lava pits, encourage the player to wait until the lava is either low enough or gone before jumping (timing). The higher the geyser, the longer it will be before the next geyser rises. This dynamic proposes an interesting question to the player: does one make a difficult jump early, when the geyser's higher, to avoid getting caught by the subsequent geyser or make an easy jump later, when the geyser's lower, but risk being caught by the subsequent geyser on the uprise?

MULTI-COLOUR TRANSPORT PADS

Purpose: To teleport the player back to the centre of the room

Level: Hotel Horror

Multi-colour transport pads are fluorescent spaces which transport Wario to the centre of the room when he touches them.

SWITCH LADDERS

Purpose: To add another step of interaction to CLIMBING ladders

Level: Hotel Horror

Switch ladders are ladders activated by a switch block. They're used in arrangements in a similar fashion to block outlines, solid blocks, and slope blocks.

CHANDELIERS

Purpose: To encourage observation

Level: Golden Passage

There are two types of chandeliers: active and inactive. Active chandeliers wobble from side to side before falling when Wario enters their proximity. Inactive chandeliers are just window dressing. If a chandelier hits Wario or Wario touches the blue flame it leaves behind after hitting the floor, he'll transform into Flaming Wario.

THREATS

ENEMIES

ENEMIES



Wario Land 4 has over forty enemies, which makes this overview one of the largest sections in the book. There are four enemy types: Spearman-esque, unique, underwater, and transformative. Spearman-esque enemies are riffs on the common Spearman, with minor functional alterations and an appearance fitting the respective level/context. Unique enemies aren't derivatives of Spearmen; they have their own abilities and characteristics. Underwater enemies are only found underwater. Transformative enemies can transform Wario into one of the many transformation states, but can't hurt him. This overview is organised according to these classifications, but first some considerations.

CONSIDERATIONS

There are ten Spearman-esque enemies, twenty unique enemies, four underwater enemies, and ten transformative enemies, making a total of forty-four. The Spearman variants are the most common of all the classes. This section doesn't include enemies from boss battles, which are better explained in context of the battles themselves.

Enemies have two core functions: to get the player using the attack, traversal, and jump mechanics in various different applications and, as punishments, to add risk to the game. Most enemies are straightforward. Others have a process of steps leading to their defeat, seemingly puzzles unto themselves. Don't be fooled though. Enemies aren't puzzles, but puzzle pieces. The Caterpillar-esque Imomushi isn't very interesting on its own. It can't attack, run, or jump at Wario. The only thing the humble Imomushi can do is crawl. Yet, when you arrange several Imomushis along platforms, as in the reference, the innocent caterpillar becomes an unassuming pest who bumps Wario off the platforms. This arrangement of Imomushis and platforms is a puzzle which the player has to solve, albeit a simple one. The enemy itself is not.



Game elements that can't punish the player outright, but create the conditions under which the player can be punished still fit under the definition of an enemy. Hoggus is one such example. He can't attack Wario, but he can spawn enemies which lead to Wario being attacked.

The transformative enemies are a little different from the other enemies. They have a third core function: allow Wario to transform. Also, instead of

punishing the player by reducing Wario's health, they transform him when he doesn't need to be transformed, thereby wasting the player's time.

Wario Land has thirty-five enemies. *Wario Land 2* has twenty-nine. *Wario Land 3* has thirty-two. *Wario Land 4* has forty-four. The figures from the earlier three games are taken from the Super Mario Wiki¹. Although there are probably some holes in my calculations (the wiki seems to include boss battle enemies, but not minor hazards, like spikes), *Wario Land 4* still has the greatest number of enemies by a wide margin. As an aside, consider that *Super Mario Bros.* only has fifteen enemies and several of them are variants (eg. Koopa Troopa and Koopa Paratroopa).

All land enemies generally exhibit the same basic properties:



- » Have three states: neutral, knocked, and paralysed.
- » Have weak and offensive points.
- » Attacking the weak point defeats the enemy.
- » Touching an offensive point hurts Wario, causing him to lose a heart, some coins, and recoil.
- » Touching a weak point causes both Wario and the enemy to enter the knocked state. The enemy then turns around and walks in the opposite direction.
- » Knocking an enemy into a wall causes them to flip over and become paralysed.
- » Jumping on or up into an enemy's weak point paralyses them.
- » Wario can PICK UP a paralysed enemy.
- » Walk along a platform or flat surface until they reach an end point (the end of the platform, a wall, a change in topography, or the edge of the screen) and turn around.
- » Jump when Wario SMASH ATTACKS the ground and flip over when Fat Wario lands a jump or Wario HEIGHTENED SMASH ATTACKS.

¹ Wario Land: http://www.mariowiki.com/Wario_Land:_Super_Mario_Land_3

Wario Land 2: http://www.mariowiki.com/Wario_Land_II

Wario Land 3: http://www.mariowiki.com/Wario_Land_3

- » Dropping one enemy onto another doesn't do anything.
- » Die when a projectile is thrown into them.
- » Transformative enemies turn around to fire a projectile at Wario when he's in range.

Above ground, vertical movement is inherently limited due to gravity. Enemies therefore only need routine, walk-back-and-forth AI to engage the player. In water though, Wario can swim vertically with minimal resistance from buoyancy. Swim-left-to-right AI is therefore insufficient. To preserve the power relationship between enemies and Wario, underwater enemies move faster, have more sophisticated movement patterns, and cover space in their own unique ways.

For each enemy, I list their purpose, spoils, and tactic. Purpose is their role in the game. Spoils are the coins and small hearts they drop once defeated. The number in parenthesis is the value of coins dropped in coin units. Tactic is how Wario can beat the enemy.

SPEARMEN-ESQUE ENEMIES

MARUMEN (PURPLE, RED)

Purpose: Allow and encourage the player to play around with enemy units without consequence

Spoils: Purple–Small heart and a small coin (10), Red–Small heart and a red coin (50)

Tactic: Attack

Marumen are the first enemies Wario encounters. They're nothing, but harmless fodder which store coins and are good for pegging into walls. By SMASH ATTACKING the ground next to them, they change their colour from purple to red and vice versa. In their red state, Marumen drop more coins. This property gives the player more incentive to interact with the enemy. Marumen are rare, if not absent, in the hard and super hard difficulties.

SPEARMEN (YELLOW, BLUE, RED)

Purpose: To provide minimal resistance on the ground

Spoils: Yellow–Small heart and a small coin (10), Blue–Small heart and a red coin (50), Red–Small heart and a silver coin (100)

Tactic: Attack from above or behind when they're not shielding

Spearman are Marumen who attack Wario with their spears. They hold their pointy lances in the direction they're facing, leaving two areas open for attack: the head and back. Like Marumen, Spearman come in different flavours that the player can alternate between by SMASH ATTACKING the ground. The differences are:

- » Yellow—Walks to the end of a platform and turns around.
- » Blue—Same as above, but twirls spear, defending their head, when changing direction, switching from another colour, or after recovering from being knocked back.
- » Red—Same as above, but raises spear and runs towards Wario when nearby.

PET BOTTLE

Spoils: Small heart and a red coin (50)

Aside from spoils, identical to yellow Spearman.

TOY CAR

Identical to yellow Spearman.

DICE MEN

Purpose: Projectiles to clear rows of unit blocks in board game meta-game

Spoils: None

Tactic: Attack from above or behind

Dice Men are dice with arms and legs. They hold spears and appear in The Big Board when Wario lands on an enemy square. Dice Men spawn in groups of three and stand around on the spot waiting for Wario to make use of them.

IMOMUSHI

Purpose: Slow movement along the ground so as to elicit interplay between Wario and the Beezleys

Spoils: Small heart and a small coin (10)

Tactic: Attack

Imomushis pose even less of a threat to Wario than Marumen as they walk at a slower pace and stand at only half the height. Spread along the floor, they encourage the player to either jump over or DASH ATTACK through them.

MOGURAMEN

Purpose: Encourage the player to SMASH ATTACK and make them more wary of what goes on around Wario

Spoils: Small heart and a red coin (50)

Tactic: SMASH ATTACK them up to ground level and then attack from above or behind

Moguramen are mole-like creatures with a drill mask on their face. They dig underground, but can also be found above ground too. Underground, Moguramen walk horizontally in a straight line, kicking spiked balls up behind them into the ground area above. SMASH ATTACKING the ground sends them up to the ground floor where they're identical to yellow Spearman. When paralysed, their offensive point, the drill on their face, no longer hurts Wario.

MEN'ONO

Purpose: Fast-moving horizontal resistance, test reaction skills

Spoils: Small heart and a red coin (50)

Tactic: Attack from above or behind

Men'ono are pink, halloween-themed creatures that wield axes. When Wario's nearby, they run towards him and, once close enough, go for the chop. The nippy dash can catch the player off guard, challenging their ability to react (reflex). Men'onos can also walk up slopes; another trick which can surprise the player. The enemy is half a unit taller than other Spearman variants.

ONOMI

Identical to Men'onos.

DEBURINA

Purpose: Lite horizontal resistance, create a stronger link between background and foreground elements

Spoils: Small heart and a red coin (50)

Tactic: Jump on their head to paralyse them or just SMASH ATTACK instead

Deburinas are slow-moving ballerina pigs that come alive from posters on the walls in post-fold Doodle Woods. They move by spinning. As they spin, their skirt whip ups, acting as an offensive point on their left and right sides. The player needs to be cautious of the two offensive points when jumping over a Deburina, so that Wario doesn't clip the skirt as he falls.

UNIQUE ENEMIES

TOTSUMEN

Purpose: Test the player's reflex skills with a fast charge attack, surprise them by running off platforms

Spoils: Red coin (50) and a silver coin (100)

Tactic: When walking, attack from front or behind. When charging, attack from above or behind.

Totsumen are creatures that wear masks with a pointed tip protruding out from their head, their offensive point. They have two states: walking and charging. When walking, the tip points upwards, making their front and back weak points. Totsumen charge, like a bull, when Wario's in close horizontal range. When charging, their tip points out in front, making their head and back weak points. Each state gives the player a different way to interact with the enemy, which makes them rather dynamic foes. Totsumen continue to charge until they hit a wall or slope, regardless of whether or not they fall off a platform. This aspect allows the player to take advantage of the enemy and personalise play. Totsumen enter the charging state as soon as Wario's in range, so it's practically impossible to attack them front on, unless Wario's already ploughing ahead with a DASH ATTACK.

TOBAWANI

Purpose: Make navigating swinging platforms more engaging, keep the player on their toes

Spoils: None, can't be defeated

Tactic: Move or jump to avoid

Tobawanis are crocodiles that swim back and forth along divides of water. When a Tobawani's vertically aligned with Wario, it leaps out of the water in a straight line to attack him. The player can avoid the attack by quickly moving horizontally or jumping above the croc's reach. After landing back in the water, the Tobawani briefly swims faster in the direction they were travelling so as not to constantly align with Wario and interrupt his movement. When Wario crosses a pool of water, it's inevitable that a Tobawani will jump out, since it's impossible to pass without aligning at least once. Tobawanis make platforming over water tricky as the player must safely navigate the platforms and be conscious of the crocodile at the same time.

Tobawanis are used in conjunction with swinging platforms. These exclusive level elements create timing challenges where the player must determine when two platforms will be close together before jumping. The Tobawanis attack the player while they're waiting for the right time to jump, potentially throwing off their timing.

If a Tobawani faces Wario in the water, it'll rapidly swim towards him. If Wario swims into a Tobawani from underneath or behind, he'll push the enemy forward.

HARIMEN

Purpose: Encourage the player to SMASH ATTACK and jump with caution

Spoils: Small heart and a silver coin (100)

Tactic: SMASH ATTACK the ground or jump into them from underneath, then SMASH ATTACK their exposed weak point. THROW a projectile at, or ROLL into, them.

Harimen are spiked enemies who can only be defeated through unconventional means. They're often placed at the bottom of a drop, acting as moving sets of spikes with interplay.

HARIMENZETTO

Purpose: Encourage the player to HEIGHTENED SMASH ATTACK and jump with caution

Spoils: Small heart and three silver coins (300)

Tactic: HEIGHTENED SMASH ATTACK the ground or throw a projectile at them, then SMASH ATTACK their exposed weak point. ROLL into them.

Harimenzetto are a superior form of Harimen which require further unconventional means to defeat.

TOGEROBO

Purpose: Teach the player about enemy attack ranges

Spoils: Small heart and two silver coins (200)

Tactic: Attack the body from behind. Wait until head is removed and SMASH ATTACK body.

A Togerobo is a slow-moving robot. Its spiky ball head and blue body are together 2 units tall, 1 unit each. The robot's spiked front and head can harm Wario. When the enemy's within half a screen length away, its head pops out and rolls towards Wario. It continues to roll until it hits a wall. A replacement head spawns a second later. Wario can change the direction of the spiky head by SMASH ATTACKING the ground shortly after it starts rolling. In what can only be considered an oversight, the player can't exploit this technique to defeat Togerobo with its own head, which just rolls past the robot.

In its head-less state, the top of Togerobo's blue body is exposed as a weak point. Its unprotected back is a weak point too, but full JUMPING over the robot when its head is still on is risky, given that it's possible for the head to pop out and hurt Wario. As with the lava geysers, Togerobos present the player with interesting questions: do they wait for the enemy to drop its head or full JUMP over the head as it sits on the body? The former values safety at the expense of time, while the later values time at the expense of risk.

ROBO BIRD

Purpose: Cover the player's blind spots, test reaction skills

Spoils: None

Tactic: Get in close and jump on body

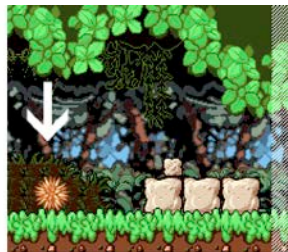
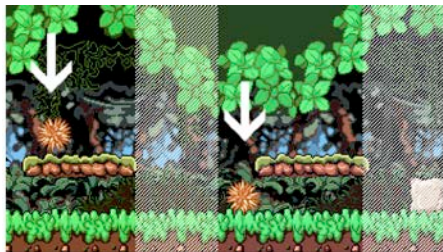
Robo Birds are mechanical birds that fly towards Wario in a straight line when he's in close horizontal proximity. They're placed in blind spots to catch the player between jumps, forcing them to dodge after already putting Wario in motion. To safely navigate around them, the player needs to move Wario into their range to lure them out, before retreating to a safe distance where he can easily avoid them. This can be tricky to pull off as Robo Birds only advance when Wario's immediately close to them. Once the player's prompted the enemy to move, they'll likely try to dodge right away, given Wario's tight proximity. The Robo Bird, however, counters such knee-jerk reactions by moving deceptively slow, making it easy to catch Wario on the fall of a premature jump. Compared to other enemies whose attacks are dependent on Wario's relative position, Robo Birds have a shorter range and slower movement. These subversive properties make the enemy difficult to judge and explain why they can only be found in the hard and super hard difficulties. Wario can defeat Robo Birds by jumping on them from above.

HAY BALLS

Purpose: Prompt the player to jump or ROLL, test their adaption and reflex skills

Spoils: None

Tactic: ROLL into or avoid them



Hay Balls fall from the sky and roll towards Wario. With no visible weak point, most players aren't likely to realise that they can be cleared with a ROLL. The slopes alongside Hay Balls artificially compensate for the lack of form

fits function. The enemies are difficult to avoid as they fall and roll quickly. As shown in the reference, when Wario crosses a certain point on the horizontal axis (the lined areas), a Hay Ball spawns from the respective spawn point (the arrows). So long as Wario remains stationary on that point, new Hay Balls will continue to spawn every time the one in play hits a block or wall and breaks. On hard, the distance between Wario and the spawn point is shortened and many Hay Balls spawn just before the slopes, catching Wario's jumps.

SPIKES, SPIKY BALLS (BIG AND SMALL), AND ICICLES

Purpose: Define danger areas in the environment, create risk/reward

Spoils: None, can't be defeated

Tactic: Avoid them

These three enemies threaten Wario with a loss of health, thereby manipulating the player to play in particular ways. The properties of each are different though.

Spikes are limited to the ground and ceiling, persuading the player to jump over or stay under them.

Spiky Balls come in two sizes, big and small. Small Spiky Balls are black, a unit in size, and float in mid-air. Big Spiky Balls are green with beady, little eyes. They're a unit and a half in size and tend to be placed next to ceilings and walls. Spiky Balls are spikes without the limitation of floors and ceilings.

Icicles form on ceilings, fall, and then form again, interrupting Wario's horizontal movement. They emit a sound at each step, which is necessary given that they can land on Wario when out of the player's view. In this regard, Icicles encourage the player to not just look, but listen for enemies.

HAMMERHEADS

Purpose: Test timing and knowledge skills

Spoils: None, can't be defeated

Tactic: Wait for them to attack and then move past

Hammerheads come in two varieties: active and inactive. Active Hammerheads release two small Spiky Balls from the top of their head every few seconds. Inactive Hammerheads don't. You can tell which are active by their blinking lights. Hammerheads of the same colour release Spiky Balls at the same time. Red and blue alternate their releases so that when one colour

of Hammerhead have released Spiky Balls, the other is in wait².

Hammerheads double as platforms and are often arranged for the player to use them as such. However, because they release s from the same surface Wario lands on, the player needs to wait for the delay between releases before jumping onto a Hammerhead (timing). By virtue of several Hammerheads occupying the same space, the area around them becomes filled with moving Spiky Balls that spawn at a set intervals. To safely navigate these treacherous areas, the player must track the threats and monitor the time at which they spawn, adding timing and knowledge skills to the platforming.

SPARKIES AND SPARK BOXES

Purpose: Surprise threats along the ground, test reflex skills

Spoils: None, can't be defeated

Tactic: Jump to avoid

Sparkies are balls of spark which run along the ground towards Wario, dying out when they hit a wall. They spawn from active Spark Boxes. The lack of active Spark Boxes on normal difficulty conditions the player to see these spawn points as window dressing so that when they become active on hard, the fast-moving Sparkies catch the player off guard.

HOGGUS

Purpose: Add enemies to Doodle Woods, slow the player down

Spoils: None, can't be defeated

Tactic: Block Hoggus behind foreground elements

Hoggus is a flying pig artist who oversees Doodle Woods. As a painter (Lakitu), he paints (spawns) a new picture (enemy) into the landscape (level) every 6 seconds or so. Hoggus positions himself at the top of the screen, on the left- or right-hand side depending on the direction Wario faces. When Wario turns around, Hoggus flies to the opposite corner so as to always stay in front of him. If he didn't, he'd spawn enemies behind Wario where they wouldn't be of much use. Although similar to Lakitu from the Mario games, Hoggus throws out two types of enemies instead of one, and Wario can't steal his cloud. When two spawned enemies are on-screen, Hoggus waits until one of them has left before he starts drawing again.

2 I can't comment on green Hammerheads because they're never in the same room as the red and blue ones.

If Hoggus's paintings are obscured by a foreground element when he reveals them, before the enemy enters the level, no enemy spawns and Hoggus appears upset. He remains in this state until the player moves him out from behind cover. This is why Hoggus is absent from Doodle Wood's interior areas: the roofs would prevent him from spawning enemies.

The Dendens and Butabis Hoggus spawns fill the barren Doodle Woods with interactions. Because they're spawned in front of Wario, they intersect his horizontal movement.

DENDEN

Purpose: Provide horizontal resistance which is awkward to deal with

Spoils: None

Tactic: Attack their front, avoid when they roll into a ball, SMASH ATTACK to flip them and then SMASH ATTACK their exposed weak point

Dendens are one of the two enemies that spawn from Hoggus's paintings. The thorny-shelled snails inch back and forth until they're close enough to Wario that they'll curl into a ball, covering themselves in spikes, and roll forward until they hit either him or a wall and break. As with a Togerobo's head, SMASH ATTACKING the ground causes a rolling Denden to change direction. In regular form though, SMASH ATTACKING sees the snail curl up and sit stationary, exposing their underbelly. Dendens that land on a bumpy surface also roll up into this vulnerable state. Denden's complicated behaviour, protective layer of spikes, and confusingly-similar vulnerable and attacking states make the player apprehensive to interact with them.

BUTATABI

Purpose: Provide horizontal resistance which is awkward to deal with

Spoils: None

Tactic: Jump on or attack from behind



Butabis are flying pig creatures that spawn from Hoggus's paintings. On spawning, they swoop away from Wario and then towards him, back and forth, losing height with each successive glide. Their path is determined by Wario's relative position which dictates the initial swing. Since each swoop is steep, falls quickly, rises slowly, and has the Butabi descend roughly 1.5 units (which is tricky to account for, given the half unit), it can be easy to misjudge the pattern. The horn protruding out from their head, which changes orientation on the back swings, can also prove troublesome. As can be seen in the reference, Butabis cover a wide area, being able to catch Wario when jumping, standing, CROUCHING, or falling. Their range, difficult-to-predict movement patterns, and constantly shifting offensive point make Butabis considerable foes. Once spawned though, the area they occupy is fixed, thus the player only needs to move out of their range.

Dendens and Butabis don't drop spoils as if they did, the player could exploit the spawning enemies to amass an infinite supply of coins. Thus, the premise of *Wario Land: The Shake Dimension* would be rendered moot.

YUREI

Purpose: The level gimmick for Crescent Moon Village

Spoils: None, can't be defeated

Tactic: Avoid the swoops for Keyzer and DASH ATTACK forward

Yurei is a pirate ghost who inhabits Crescent Moon Village. He can't be touched and is only present in outdoor areas. Pre-fold, Yurei floats from left

to right at the top of the screen, following Wario and swooping down to grab any stray coins that fall out of blocks or enemies. Post-fold, he pursues the Keyzer, pouncing for it every time Wario remains stationary for too long. If Yurei catches the Keyzer, he'll float up to the top of the screen and hide. During this time, the pirate ghost flashes yellow and an alarm sound plays until the Keyzer is returned. Without the alert, the player may complete the stage not noticing that the Keyzer was stolen from them.

The best way to deal with Yurei is to keep moving so that he can't catch up. He waits for Wario at each outside doorway, so the player must avoid at least one of his swoops. Similar to Hoggus, Yurei adds flavour to what would otherwise be vanilla arrangements.

MAYU BIRD

Purpose: Give the player obstacles to manoeuvre around with the magic carpet

Spoils: None

Tactic: Fly around or jump on their head

Mayu Birds are small birds, with little nippers, that sway back and forth on the spot. Touching their pincers hurts Wario, bumping them from the side sees them move to a higher vantage point, while jumping on the head defeats them. Mayu Birds don't drop any spoils as if they did, the trinkets would fall to the ground, leading the player downwards and thus encouraging them to undo their progress.

IWAO

Purpose: Difficult horizontal resistance, a competent combatant against Wario

Spoils: Small heart and a silver coin (100)

Tactic: Come in close and SMASH ATTACK their head

Iwaos are stout rock men that throw boulders in the first instance of the Fiery Cavern. They summon said boulders when Wario's nearby by slamming the ground with their fists, stunning him with a quake when on the ground. They then throw the boulder at Wario, which bounces forward into a roll and keeps rolling until it's either off-screen or hits a wall and breaks. Shortly after, the Iwao prepares another boulder.

The quake's stun disrupts the player's flow and shortens the window of time they have to avoid the incoming projectile. Since the boulder is 2 units high,

Iwao is 1.5 units high, and the throw lifts the boulder some way into the air, the height can easily trap Wario when up close. The player should therefore make a short JUMP to avoid the quake and then a full JUMP to clear the boulder when it's closer to the ground (reflex and dexterity), before moving towards the Iwao to attack. A full JUMP is necessary given the bounces following the boulder's fall. The quake, size of the boulders, and coverage of the throw are the sources of Iwao's power.

The best method to defeat an Iwao is to move Wario right up close, wait until the boulder is thrown, and then SMASH ATTACK his head. To do this though, the player must first spot the hole in the boulder's trajectory and not fear Wario being hit by the projectile.

Bumping, attacking, or jumping on an Iwao only knocks it slightly.

After Wario flicks Fiery Cavern's frog switch, the Iwaos turn into Yukiotoskos, denoting some kind of relationship between the two enemies.

UNDERWATER ENEMIES

GOGGLEY-BLADE

Purpose: Interrupt horizontal and vertical movement, cover a rectangular body of water

Spoils: Small heart and a small coin (10)

Tactic: UPWARDS STROKE or FORWARD STROKE into their belly

Goggley-Blades are fish which swim in a rectangular formation. Their offensive point is the blade on their head and their weak point is their belly. When Wario aligns horizontally or vertically and is within range, Goggley-Blades charge towards him in a straight line. Avoiding is simply a case of swimming out from that linear path (reflex). Because Goggley-Blades often change axes and their fast chase can catch players off guard, the enemy forces the player to monitor and adapt to their constantly-shifting movement patterns.

SHIERAGUTCHI

Purpose: To obstruct horizontal movement and make the player observant of the area below Wario

Spoils: Small heart and a small coin (10)

Tactic: Move in close, let them jump up and then UPWARDS STROKE from underneath

Shieragutchis are spiked clams that sit on the ground. When Wario is in vertical range, they leap up to bite him. If successful, they drag him down to the sea floor. If the player dodges (reflex), they can then swim underneath the Shieragutchi and UPWARD STROKE its back to defeat it. The clams jump just before Wario aligns with them so as to make it easier for the player to expose their weak point.

UTSUBOANKO

Purpose: Single point hazard, make the player more observant

Spoils: None, can't be defeated

Tactic: Avoid them, be wary of dark holes

Utsuboankos are giant eels that hide in dark holes. When Wario's nearby, they spring out to bite him. Because Wario only needs to be near a hole for a Utsuboanko to reveal itself, as opposed to in front of a hole, the player is given reasonable leeway to react. If Wario avoids the attack, the eel looks confused and returns to his hole. In this state, the enemy can't hurt Wario. In Mystic Lake, the only place you can find Utsuboankos, there are many dark holes, but only the ones with glowing red eyes in the middle contain Utsuboankos. By being observant of their surroundings, the player can determine where the Utsuboankos lie and swim around them.

Goggles-Blades, Shieragutchis, and Utsuboankos together cover horizontal, vertical, and fixed spaces. The trio give the player various ways to engage with the unique spatial dynamic underwater.

TOGENOBI

Purpose: Slow down swimming, get the player to swim with precision

Spoils: None, can't be defeated

Tactic: Move into one of the quadrants and follow it around to the other side



A Togenobi is a four-legged octopus (quadpus?!), with maces on the end of each leg. As the image shows, the four legs make a '+' shape. Only the maces hurt Wario; he can swim right through the legs. Swimming past a Togenobi is tricky as their legs rotate anticlockwise while simultaneously extending and retracting. Monitoring the constantly changing positions of the legs and maces as you have Wario safely follow one of the quadrants around is like patting your head, rubbing your tummy, and hopping on one leg at the same time (adaption).

TRANSFORMATIVE ENEMIES

BEEZLEY

Purpose: Transform Wario into Puffy Wario, provide horizontal resistance by transforming Wario into a state which limits horizontal movement

Spoils: None

Tactic: ATTACK JUMP them as they swoop, throw a projectile at them

Beezleys are bees with stingers on their hinds. They float above ground and swoop down diagonally at Wario when he's in range. As they swoop, they make a buzzing noise to warn the player. Since Beezleys only drop to 1 unit above the ground, Wario can avoid their attacks by CROUCHING. Jumping into a Beezley sends it retreating to higher vantage point.

By swooping diagonally, it takes Beezleys longer to reach Wario, which makes it easy to avoid their attacks. If they swooped in straight lines, then it'd be more difficult to interact with the bees as interaction is dependent on the player having enough time to respond to their attacks. On the other hand, their diagonal path allows them to cover a greater area.

RINGOSUKI

Purpose: Transform Wario into Fat Wario, slow down Wario's movement

Spoils: None

Tactic: Attack

Ringosukis are supposedly monkeys. They throw apples which turn Wario into Fat Wario. The apples are thrown out at an arc, so oftentimes Wario needs to jump to reach one. Ringosukis are heavy enemies, so they can't be thrown far, shorten Wario's jumps when held, and survive when THROWN at a smaller enemy.

MENHAMMER

Purpose: Transform Wario into Bouncy Wario, provide horizontal resistance by transforming Wario into a state that limits horizontal movement

Spoils: None

Tactic: Attack from behind or above

Menhammer are—surprise, surprise—men with hammers. When he's in range, Menhammer jump towards Wario with their mallet ready to pound him, covering a height of 2 units and a distance of 4 units. The range and immediacy of their jump attack are balanced out by a sound played just as they launch off the ground, forewarning the player. Also, because the attack's trajectory is fixed, Wario can step backwards, out of the Menhammer's range, to easily avoid them. CROUCH SLIDING under the arc of the jump is another option, albeit a risky one. After landing a hit, Menhammer fall back paralysed so as not to clutter play when they're not needed.

BOW BALLOON

Purpose: Transform Wario into Puffy Wario, provide horizontal resistance by transforming Wario into a state that limits horizontal movement

Spoils: None

Tactic: Attack

Bow Balloons shoot arrows in a straight, horizontal line when Wario is close to them. So long as he remains in horizontal range, it takes 2 to 3 seconds for the Bow Balloon to shoot a second arrow. The arrows pass through solid objects and continue moving until they leave the stage.

YUKIOTOKO

Purpose: Transform Wario into Frozen Wario, disrupt the player's progress

Spoils: Small heart and red coin (50)

Tactic: Attack

Yukiotokos are yeti-like creatures which blow puffs of ice. They're functionally identical to Bow Balloons, except that their projectiles are larger and turn Wario into his frozen form. When Wario's behind a Yukiotoko, the enemy will whip around to hit him with its ice breath. This makes them the most persistent of all the transformative enemies. They're also the only enemy in this group to drop spoils.

KAENTSUBO

Purpose: Transform Wario into Flaming Wario, waste the player's time as soft punishment

Spoils: None

Tactic: Attack

A Kaentsubo is a walking torch that attacks by bending over and spreading a line of flames along the ground. If Wario touches a Kaentsubo's flame or the fire it sets across the floor, he'll transform into Flaming Wario. Because Kaentsubos are fragile, if they're dropped, they'll break.

MINICULA

Purpose: Transform Wario into Vampire Bat Wario

Spoils: None, can't be defeated

Tactic: Touch it or avoid it

Miniculas are small bats which fly around in a circle. If Wario touches one, he'll turn into Vampire Bat Wario. That is all.

SKELETON BIRD

Purpose: Transform Wario into Zombie Wario, disrupt the player's progress

Spoils: None

Tactic: Avoid, touch as Zombie Wario and then touch again or attack in neutral form

Skeleton Birds are exactly what the name suggests, just add a red scarf and green bandana. They float up and down, moving left to right in a sine wave pattern while spitting green goo diagonally towards the ground. The diagonal movement of the projectiles from varying heights traps Wario along the ground in a similar fashion to Iwaos and their boulders. Height and an unconventional movement pattern are the Skeleton Bird's greatest assets. The projectiles break when they hit a solid surface.



The red shapes represent the enemy attack ranges. As we can see, the height that they attack from and the horizontal distance they/their projectiles cover trap Wario along the ground. In all three examples, he can only move left or right to dodge. In the battle for space, where gravity rules, height (accessibility to space) and diagonal movement (ability to move effectively through space) are key assets.

Only in his zombie form can Wario attack a Skeleton Bird. After the initial contact, the enemy becomes paralysed, similar to Dry-Bones from *Super Mario Bros. 3*. Another bump or an attack in the neutral state defeats the enemy. This unusual means of attack allows the player to use the enemy's own powers against them. Failure is a way of clearing the threat for good.

PIG HEAD STATUES

Purpose: Transform Wario into Flaming Wario

Spoils: None, can't be defeated

Tactic: Avoid or stand underneath

Pig head statues spit fire onto the ground which Wario can then touch to transform into Flaming Wario. Unlike Kaentsubos, pig head statues can't be interacted with.

SNOW CLUMPS

Purpose: Transform Wario into Snowman Wario, make the player more cautious of elements that appear to be window dressing

Spoils: None, can't be defeated

Tactic: Avoid or stand underneath

Clumps of snow fall at regular intervals from the ceilings of icy environments. Slopes are always in the vicinity of snow clumps so that the player has a means of exiting the transformation. I sometimes refer to snow clumps as "falling clumps of snow" to emphasise their behaviour.

REWARDS

COINS, CRYSTALS, DIAMONDS, AND TREASURES

COINS, CRYSTALS, DIAMONDS, AND TREASURES



Positive reinforcement, a reason to jump, scalable difficulty, risk/reward, tension, bait, a way to direct the player's attention, secrets, and deceit. With such a myriad of uses, it's no wonder coins are a long-held staple of the platforming genre.

Just like *Super Mario Bros.*'s gravity-defying coins and *Sonic the Hedgehog*'s spill-everywhere rings, *Wario Land 4* has its own variant of collectable currency. The reward system is broken into four classes, each with their own specific purpose. Within each class are several tiers of currency with differing values. Such a sophisticated system of rewards is perhaps to be expected, given the nature of the game's anti-hero protagonist.

CONSIDERATIONS

The rewards Wario collects contribute to a tally. A unit on this tally is 1 coin unit.

So that the player doesn't need to remember the value of each reward type, the number of coin units pop up on-screen as Wario collects rewards. The size of the text scales depending on the size of the reward. The more coin units, the larger the number. The individual coins, crystals, diamonds, and treasures also obey the rules of form fits function. Large diamonds are more valuable than small coins, in the same way a gold coin has more worth than a silver one.

There are no crystals or treasures in the Golden Passage, only diamonds.

Collecting rewards in each stage contributes to a level kitty which is displayed in the top-right corner of the screen when Wario's in a level. Depending on the kitty's size, come the end of the level, the player is rewarded with a crown. The time left on the post-fold timer and Wario's remaining hearts are added to this pool. A level kitty of 10,000 coin units grants a gold crown, 8,000 grants a silver crown, and 6,000 grants a bronze

crown. If the player can get a gold crown in every stage, they'll unlock a special karaoke function for the music room.

A global kitty, the combined totals from all the levels, is displayed on the file select menu and in the passage screens.

Some levels contain crystal outlines. These outlines become full crystals after activating the frog switch.

COINS

Coins can be gained in one of three ways: breaking blocks, defeating enemies, and opening chests. The type of coin rewarded depends on the difficulty of the task. For example, beating an Imomushi, the harmless caterpillar enemy, offers a small coin (10 coin units), while opening a hidden treasure chests yields a gold coin (500 coin units).

After defeating an enemy, a coin and small heart pop out of them. Collecting the drops extends the interaction cycle between Wario and the enemy. These spoils can be flung some way and are affected by gravity. Where they land, and the challenge in claiming them, is dependent on the environment around them. The difficulty is therefore highly organic. The player can factor this aspect into the way they beat enemies, and try to clear them away from high ledges, water, or spikes.

SMALL COINS

Worth: 10 coin units

How to get them: Attack unit blocks (randomised drops) and weaker enemies

Frequency: Common

BRONZE COINS

Worth: 50 coin units

How to get them: Attack blocks (randomised drops) and average enemies

Frequency: Common

SILVER COINS

Worth: 100 coin units

How to get them: Attack difficult enemies. Wario also drops these coins when hit.

Frequency: Uncommon

GOLD COINS

Worth: 500 coin units

How to get them: Open treasure chests

Frequency: Rare

CRYSTALS

Crystals are to *Wario Land 4* what coins are to *Super Mario Bros.*. Where coins spawn organically from various game elements, crystals are pre-placed in levels. With direct control over their positioning, the game designers can use crystals to elicit various actions from the player. Crystals are also unaffected by gravity. There are two types of crystals: blue and red. Red crystals are worth ten times the coin units of blue crystals, but they're rarer and more difficult to reach.

BLUE CRYSTALS

Worth: 10 coin units

Frequency: Common

RED CRYSTALS

Worth: 100 coin units

Frequency: Less common

DIAMONDS

Offering ten times the coinage of red crystals, sharing the same properties, but being rarer still, diamonds could be considered the third tier of crystals. Generally speaking, each level consists of five to six diamonds, three to four in the main level and two in the puzzle rooms. With so few in play, finding a diamond requires keen observation skills. Their rarity and significant value

give them a high precedence as secrets.

DIAMONDS

Worth: 1,000 coin units

Frequency: Six per stage

TREASURE CHESTS

Treasure chests are secrets tucked away where many players won't find them. Unlike coins, crystals, and diamonds, treasures don't add to the kitty; they reward the player in other ways. Aside from boss battle chests, which only have a visual presence as a timer, silver chests and yellow lid chests drop gold coins when opened.

SILVER CHESTS – MUSIC CD

The super secretest secrets in the game, silver chests are hidden in the most difficult-to-find hidey-holes in each of the sixteen main levels, one per stage. They're worth the hunt though as inside is a CD, a track for the music room on the main hub.

YELLOW LID CHESTS–HEART MEDALLION

Each passage only has two yellow lid chests, with no more than one per stage. There's no pattern as to which stages they're in. Yellow lid chests are a little easier to find than silver chests. The heart medallion reward restores Wario to full health.

BOSS BATTLE CHESTS

The boss rooms in the four main passages each hold three treasure chests, making twelve total. When fighting each boss, a timer counts down. As the timer falls closer to zero, the chests begin to leave the room. Once the player defeats the boss, the remaining treasure chests go to the Golden Passage where the final boss, the Golden Diva, is located. When Wario finally confronts the Golden Diva, a timer runs down again. This time, all the treasures the player has collected up to that point are up for stake. The time it takes the player to beat Golden Diva dictates the number of treasure chests Wario can take away at the end of the game, which in turn determines the final ending. The chests are incentives to beat the bosses quicker.

GAME STRUCTURE

LEVEL, HUB, AND SYSTEM STRUCTURE

LEVEL, HUB, AND SYSTEM STRUCTURE

Wario Land 4's gameplay framework has three tiers to it: the levels, the hub, and the system.

LEVEL STRUCTURE

Each *Wario Land* game has its own hook that separates it from previous entries in the series. *Wario Land* established the series template. *Wario Land 2* radically overhauled transformations and employed a branching narrative. *Wario Land 3* introduced day and night states and a *Metroid*-esque ability system, giving the game an exploration-heavy bent. *Wario Land 4*'s hook is folded level design.

Pre-fold, post-fold, folded level design. You may have noticed the word “fold” being thrown around quite a lot, particularly for a book which has nothing to do with origami. Folded level design describes levels where the player must reach the end of the stage, turn around and head back to the start. That is, the “end of the stage” is actually the middle (the fold) and the sections before and after it are either sides of a folded piece of paper. There's a starting point, the closed vortex; the fold, the frog switch; and an ending point, the open vortex. From the starting point to the fold is the pre-fold and from the fold to the ending point is the post-fold. Every level follows this fixed structure.

PRE-FOLD

Key Game Elements: Two purple puzzle pipe rooms, two jewel pieces, closed vortex

The pre-fold, the tutorial part of the level, introduces level-specific elements, giving the player as much time as they need to explore and familiarise themselves with the arrangements. The two purple pipe rooms offer incentive to explore.

FOLD

Key Game Elements: Frog switch

The frog switch is the physical representation of the fold. Once the player flicks it, the countdown timer becomes active and they must return to the vortex through the newly-opened channels.

POST-FOLD

Key Game Elements: Two jewel pieces, open vortex

With a timer looming overhead, the post-fold is a test on what was introduced pre-fold. Furthermore, having developed throughout the pre-fold, the arrangements post-fold are the most sophisticated and challenging in the level, leaning away from exploration and towards execution.

Once the timer hits zero, the environment greys, key game elements remain coloured, and Wario starts losing coin units until the level kitty runs dry and he's kicked out the level on a time out.

HUB STRUCTURE

Wario Land 4's central hub is the Golden Pyramid. At first, only the Entry Passage, consisting of a tutorial level and boss fight, is available. Once the passage is completed though, the player is free to approach the four main passages as they wish. Each of these passages consist of four levels and a boss fight. For each level, the player needs to retrieve the Keyzer to advance to the subsequent stage and four jewel pieces to open the door to the boss room. After defeating the four main bosses, the Golden Passage opens up in middle of the Golden Pyramid. The Golden Passage can be thought of as the exit passage, acting as the final test with its own stage and boss battle. Each passage also contains a shop and mini-game room. The mini-games reward the player with coins that they can spend in the shop on various health-reducing aids against the boss.

SYSTEM STRUCTURE

On loading up *Wario Land 4*, an introductory cutscene shows how Wario first stumbles upon the Golden Pyramid, establishing the narrative premise. The player can press start or A to skip the cutscene.

The title screen shows Wario driving his Wario Car through the desert.

Pressing start or A again advances to the file select screen and has Wario drive off. The title screen is a straight continuation of the first cutscene, while the file select screen creates a short delay which neatly segues into Wario's arrival at the Golden Pyramid. Even though the player has to get through two menus, there's no break in narrative continuity.

On the file select screen, the player can choose a save slot to start, load, or delete. All new games begin on normal difficulty. Only after completing the game once can the player choose between normal or hard. After they beat the game on hard, they can take on super hard.

After starting a new game, another cutscene plays showing Wario arriving at the Golden Pyramid before entering and falling through to the central hub. This cutscene can't be skipped and ends with the player taking control of Wario. The connection between the games three tiers is seamless and natural.

OTHER

USER INTERFACE

USER INTERFACE

Wario, like all video game avatars, is a half-real character made up of two people: Wario and the player. Each brings something different to the game. Wario brings his mechanics and personality mould. The player brings their agency and life experiences. Wario is situated within the game world, the player is not. Having an external perspective, the player can see things which Wario can't see; things that are in the game, but not in the game world. That is, the user interface.

User interface sits over gameplay, in the corners and around the edges of the screen, to provide essential, easily-readable data to the player. Interface which is unnecessary or difficult to read has a tangible effect on the player's ability to play the game well. *Wario Land 4* doesn't have much meta information, but it conveys what it has well on a clean, minimal interface.



Above is a screenshot of standard gameplay. Here are the individual parts of the interface:

Hearts and Heart Gauge – Human life is commonly associated with the heart, which is why so many video games use it as the symbolic representation of health. *Wario Land 4* is no different.

Wario has eight hearts and a heart gauge divided into eighths. Using the same number reduces the information the player has to remember. Although the size of the heart gauge makes it difficult to ascertain exactly how much of the bar is full at any one time, rarely, if ever, does the player need to know such information. In a glance, they can get a relative picture of how many small hearts they need for a refill, which makes the red fill an entirely adequate visual representation. When Wario is down to one heart, the hearts and heart gauge flash yellow and a sound effect plays to alert the player.

Level Kitty – Coins represent money. Self-explanatory, really.



This screenshot is of the post-fold. The only difference is the presence of the timer and animated stopwatch. The timer is of prime importance post-fold, so it's large and positioned in the centre. The text starts out white and then transitions to yellow and red as the time closes in on zero. The stopwatch's hand spins in fast circles, reinforcing the tension of the limited time. Once the timer expires, the level kitty counts down. It increases in size, taking the precedence of the timer, while the background is greyed to denote a timeless state.



This screenshot is of a boss battle. The green bars represent the boss's health. As the health depletes, the bars change from green, to yellow, to purple. The number of bars depends on the boss and game difficulty.



This screenshot is from the level, The Big Board. When Wario's near the dice switches, the board appears on-screen, helping the player determine what number to roll next.



This screenshot is from inside a passage. Slots above each level and the boss room identify what the player's collected and what they're missing. Around the passage are various pieces of interface:

Name of the Level

Mini-game Medals – The number of medals the player has earned from playing mini-games. The frog icon distinguishes the medals from the similarly-looking gold coins.

Level Icon – This image gives the player a visual means to recognise the level. Usually it contains the key level elements, enemies, or background.

Level Kitty – Being next to the level icon, using the same gold coin as the level kitty interface in levels, and the word "BEST" tell the player that this number is their highest level kitty score for the level.

Total Kitty – The dollar sign sack implies a collected bounty of coins, making it easy to infer that this number is the total kitty.

Personally, I find the interface to be a little cluttered. If I were to change it, I'd turn it into something like this:



In the cutscenes where Wario enters the levels or boss room, there is no interface.

DIGGING DEEPER

MECHANICS ANALYSIS

GAME DYNAMICS

ENEMIES AND INTERPLAY

PSYCHOLOGY AND ENGAGEMENT

NARRATIVE

VISUAL/AUDIO

DESIGN PHILOSOPHIES

ADDITIONAL ESSAYS

MECHANICS ANALYSIS

WHY JUMP, ATTACK, AND TRAVERSAL?

MECHANICS, FUNCTION, AND MINIMUM DIFFERENCE

THE DOMINANT MECHANICS

ATTACK AND DASH ATTACK COMPARISON

DASH ATTACK – ACCESSIBILITY DIMINISHING POWER

ATTACK – POWER FLAVOURING PLAY

FAKE MOMENTUM AND STEP ACCELERATION

CONTROLLER INPUT~MECHANICAL OUTPUT

NUANCE AND THE HIERARCHY OF POWER

WHY JUMP, ATTACK, AND TRAVERSAL?

Now that you're familiar with *Wario Land 4*'s various elements and systems, we can begin the analysis proper. Let's start with the fattest bit of meat, the mechanics. Previously, I grouped the mechanics under the headings of attack, traversal, and jump. Having likely played a few platforming games yourself, you probably have a sense as to why these three categories are important. Vague ideas are not enough though. Put on your critical reader hat, it's time to dig deeper.

TRAVERSAL

The goal of *Wario Land 4* is to get from one point to another and back again, collecting various doodads along the way. This makes traversal an inherent and core part of play: the traversal mechanics directly assist the player in meeting the goal of the game. Without them, the player wouldn't be able to make much, if any, headway. Because the traversal mechanics are tied to the very essence of the game, they are the most important of the three categories.

ATTACK

The attack mechanics are similarly tied to the essence of the game, but through the conduit of the health system. Wario's HP determines the player's ability to meet the goal of the game as when he has no health, the player must restart the level. Enemies not only deplete Wario's HP, but slow him down with contrary motion. These factors make it harder to get from A to B. Thus, mechanics which minimise enemies allow the player reach the goal, and in a shorter time. If there were no health system¹, the link between the attack mechanics and the goal would be all but severed, and the attack mechanics would become a minor, if not irrelevant part of the game system.

The attack mechanics are also used to interface with many of the game's puzzles, which prevent Wario from reaching the goal unless solved.

JUMP

Gravity is the core dynamic of a side-scrolling platformer. It's what makes these types of games interesting and fun to play. Jump mechanics allow

¹ You can make this argument the other way around: if there were no *enemies*, there'd only be a weak link between the attack mechanics and the goal of the game. Chicken and egg.

the player to engage with gravity, so they are a fundamental part of Wario's ability set. Jumps are also a form of traversal, but their distinction from the other traversal mechanics and direct link to the essence of the genre make them worthy of a category all their own.

MECHANICS, FUNCTION, AND MINIMUM DIFFERENCE

Each mechanic has a function. WALK displaces the avatar along the horizontal axis. ATTACK defeats enemies. Sometimes, the functions of two mechanics overlap. ATTACK and WALK both displace the avatar along the horizontal axis.

There are a few things to consider here. A mechanic which serves multiple functions reduces the total number of necessary mechanics, and thus simplifies the game, making it easier to play. For example, in *Super Mario Bros.*, the jump mechanic allows Mario to clear chasms and avoid and attack enemies. Because jump has so many functions, the game designers didn't need to include dodge or attack mechanics as they would have only added needless complexity. On the other hand, these multifunctional mechanics are less specialised than mechanics dedicated to one sole function.

A pair of mechanics which share the same function and have little differences are superfluous. A pair of mechanics which share the same function and are distinct from one another offer choice. Going back to WALK and ATTACK, although the two achieve the same outcome, there are reasons to use each. WALK is slow and easy to input and manage, whereas ATTACK is fast, only lasts for a limited time, requires more physical effort to maintain, and the animation can be interrupted. The player is free to choose whichever mechanic they feel is most appropriate. This depends much on context; the context within the game and the context of the player. WALK is better in areas where careful navigation is needed or when the player just wants to take the game at a slower pace. ATTACK is preferable in moments of haste under a timer or when the player wishes to speed up the game.

Now that we're familiar with the distinctions between each of the mechanics (see: [Need to Know](#)) and the relationship between mechanics with unique and similar functions, we can consider how Wario's abilities stand relative to one another in the player's consideration set, i.e., when they use what mechanic, where and why. I've divided each of the three classes of mechanics (traversal, attack, jump) into smaller groups based on their like functions. Within these groups, I've then assigned each mechanic a role based on their minimum difference and relative power. Power being a term I nicked from Richard Terrell¹:

1 About That Indie Feel Part 4: <http://critical-gaming.squarespace.com/blog/2011/1/8/about-that-indie-feel-pt4.html>

"Power: The obvious, straight forward actions/interactions that achieve a functional goal (most likely the goal of the game [get from A to B and back again]). If a game is about moving and shooting, then anything that helps you do these things directly fits on the scale of power".

These roles can be thought of as the positions the mechanics occupy in the player's mind as they decide on how to deal with a situation. In some ways, this is a bit of a summary of what I said in the Need to Know section, but fear not, it'll come in handy later on.

TRAVERSAL MECHANICS

HORIZONTAL MOVEMENT

Crouch Walk – Only good for passing through unit-high passages.

Crouch Slide – Rarely useful flourish.

Walk – Slow movement, default mechanic for less-experienced players.

Attack – Fast, immediate movement that doubles as an attack. Reliable.

Dash Attack – Fast, risky movement for advanced players.

Roll – Necessary to advance in some areas, otherwise high-risk and limited to slopes.

VERTICAL MOVEMENT

Smash Attack – Hard to notice if faster than falling; better used as an attack.

Heightened Smash Attack – Linked to SMASH ATTACK.

SWIMMING MOVEMENT

Slow Swim – Careful swimming, preferable to less-experienced players.

Upward Stroke – Fast vertical movement underwater.

Forward Stroke – Fast horizontal movement underwater.

CLIMB

Climb – Necessary to ascend ladders.

Slide Down – A way to speed up descent.

ATTACK MECHANICS

HORIZONTAL ATTACK

Attack – Quick attack.

Dash Attack – Slow to start, risky and high committal, but great for long stretches. Needed to break thick blocks from the side.

Roll – Necessary to floss out long lines of unit blocks in walls.

VERTICAL ATTACK

Smash Attack – Necessary to attack vertically.

Heightened Smash Attack – Only needed in specific instances.

SWIMMING ATTACKS

Upward Stroke – Vertical attacks underwater.

Forward Stroke – Horizontal attacks underwater.

THROWING

Throw – An alternate, perhaps long-winded, way to defeat an enemy. Necessary for some puzzles.

Charge Throw – Linked to THROW.

JUMP MECHANICS

JUMPING

Jump – A tall jump with rapid ascent.

Crouch Jump – Necessary for jumping into unit-high passages.

Attack Jump – An immediate jump with complete control over the landing. Versatile.

Dash Attack Jump – A longer jump, but somewhat inflexible.

Roll Jump – Necessary to jump in the rolling state.

Stomp Jump – A way to get an added leg up when an enemy is around.

ETC.

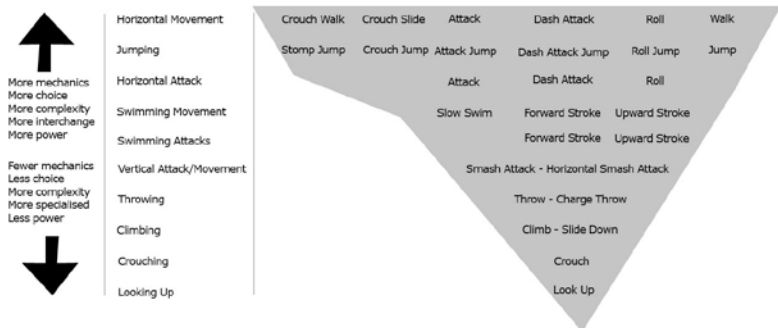
Look up – Enter doors.

Crouch – Good for sometimes dodging attacks. As an entry point into other crouch mechanics

At its minimalist, a game only needs to provide one mechanic per function. One mechanic to walk. One mechanic to attack. One mechanic to jump, and so on. For its core functions, those with the highest power (jumping, horizontal attack, and horizontal movement), *Wario Land 4* offers several mechanics with significant enough minimum difference to present players with meaningful choice. These options allow players to personalise, and thereby feel greater ownership over, play. Incidentally, the three core functions share a common choice between them: ATTACK or DASH ATTACK? Generally speaking, aside from ATTACK, DASH ATTACK, UPWARD STROKE, and FORWARD STROKE, each mechanic only has a single function.

We can represent the power, choice, complexity, and use of mechanics as such:

Mechanics, Choice, Complexity, Specialisation, and Power



The player is offered a great deal of choice when it comes to the most powerful functions, and very little choice when it comes to the least powerful functions. As a result, the least powerful functions contain more specialised mechanics, while the most powerful functions contain more multifunctional mechanics. This means that the most used areas of the game system contain more mechanics, complexity and interchangeability (between mechanics), offer greater player freedom, and are less specialised than the least used areas of the game system.

THE DOMINANT MECHANICS

Mechanics have a range of potential expression which the arrangements, by way of eliciting interaction, allow the player to realise for themselves. As the previous section touched on, mechanics have different weightings. Some have more power than others. This means that the potential meaning of some mechanics can be better realised than others. The dominant mechanics, those which are used most, therefore play a larger role in defining a game's overall message. If we are to understand *Wario Land 4*, we need to understand the role the dominant mechanics have in shaping the expressive nature of the game.

In thinking over how to judge which mechanics are dominant, I came up with two methods. Both fortunately lead to the same solution. I'll present them individually here.

POWER, DISTINCTION, AND FUNCTIONS

The precedence of mechanics in a game system depends on three factors: the mechanic's power, how distinct and advantageous the mechanic is over mechanics of the same function, and how many functions the mechanic covers. Instead of taking a positive approach though, I'll be taking a negative one. So rather than discussing which mechanics meet the criteria, I'll be focusing on which don't and why. This way, I can identify the dominant mechanics without repeating a bunch of information from the Need to Know section. Hopefully, you'll find it refreshing.

POWER

The goal of *Wario Land 4* is to get to the other side of a level and back again (traversal). To do so, the player must engage with gravity (jump) and deal with threats to Wario's health (attack). The mechanics which most directly assist the player in reaching the goal are the most powerful. That is, assuming the player is playing to win and understands the mechanics and goal of the game.

ROLL, ROLL JUMP, HEIGHTENED SMASH ATTACK, CLIMB, SLIDE, STOMP JUMP, PICK UP, THROW, CHARGE THROW, SLOW SWIM, UPWARD STROKE, and FORWARD STROKE are all dependent on separate game elements. Wario can't ROLL without a slope; HEIGHTEN SMASH ATTACK

without a raised platform; CLIMB without a ladder; STOMP JUMP, PICK UP, or THROW without a projectile; and he certainly can't swim without water. Thus, the power of these mechanics is limited to the availability of the game element, making them weaker than mechanics without external dependences.

The majority of the time, Wario is in, or close to, the neutral state. Mechanics accessible from this state therefore have greater power than those which aren't. CROUCH WALK, CROUCH JUMP, and CROUCH SLIDE can only be entered through the crouched state. This makes them weaker mechanics.

The rectangular dimensions and low resolution of the GBA screen restrict the amount of potential vertical leeway. Because the player can't see far above or below Wario, vertical movement is inherently challenging. The level designs therefore tend to favour horizontal movement. The goal of the game then isn't so much getting from A to B as moving horizontally from A to B. Mechanics which move Wario along the horizontal axis are higher up on the power scale than those which move him along the vertical axis. So we can cut out the jump and smash attack mechanics.

DASH ATTACK is dependent on an external game element, a patch of ground of sufficient length to build the attack charge, and yet isn't mentioned above. The reason being that, because the levels are horizontally-inclined and the core area of gameplay is along the ground (due to gravity), horizontal leeway is almost always available. The required runway does weaken the power of the mechanic somewhat, but nowhere near the extent of the other examples.

This leaves us with WALK, ATTACK and DASH ATTACK.

DISTINCTIONS AND ADVANTAGES

A distinct mechanic is one that offers a specialised take on their function or is the only mechanic that services their function. *Wario Land 4* is designed so that all game mechanics are distinct and none are extraneous. That is, aside from extension mechanics like HEIGHTENED SMASH ATTACK and CHARGE THROW. Extension mechanics are, by design, similar to their base mechanics and of a lower precedence. Because all mechanics are distinct, advantages are irrelevant. Take CLIMB as an example. The only way to climb a ladder is with the CLIMB mechanic, so it wouldn't matter if CLIMB was an efficient or clunky mechanic because it's the only one that serves the function of ascending ladders. For functions that are covered by several mechanics, like horizontal traversal, the mechanics have pros and cons which make them distinct and important.

If there is one exception though, it would be the CROUCH mechanics. CROUCH WALK is needed to fit through unit passages, and that's about it.

CROUCH SLIDE is a stylish, short-lived CROUCH WALK. CROUCH JUMP is a half JUMP, useful in a few rare cases. Otherwise, CROUCH WALK and CROUCH JUMP are slow compared to WALK and JUMP, and don't offer any compelling reasons to use them outside of specific contexts. They have few advantages.

FUNCTIONS

The more functions a mechanic accounts for, the more use the player can get out of it, and thus the more ubiquitous it becomes. That is, assuming that the mechanic executes the multiple functions with sufficient power.

Referring to the diagram from the [Mechanics, Function, and Minimum Difference](#) section, we can see that:

- » FORWARD STROKE and UPWARD STROKE have two functions (swimming attacks and swimming movement)
- » CROUCH has three functions (jumping, horizontal movement and crouch)
- » ROLL, ATTACK, and DASH ATTACK have three functions (jumping, horizontal movement and horizontal attack)

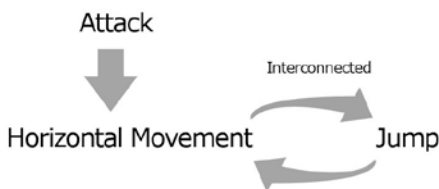
CONCLUSION

ATTACK and DASH ATTACK are the dominant mechanics. They're multifunctional, distinct, have numerous advantages, and allow the player to directly achieve the goal of the game.

THE RELATIONSHIP BETWEEN CORE FUNCTIONS

This second method interprets the relationship between the different core functions.

The jump and horizontal movement mechanics are limited on their own. Wario may be able to jump, but if he can't move horizontally at the same time, he can only jump on the spot. On the other hand, Wario may be able to move forwards and backwards, but without jumps, he can't clear pits and enemies. It's only when the two are used in conjunction that they have significant power. These functions are thereby interdependent.



WALK, ATTACK, and DASH ATTACK are the three main horizontal movement mechanics. ATTACK and DASH ATTACK are superior to WALK as they displace Wario faster and double as attack mechanics.

CONCLUSION

ATTACK and DASH ATTACK are the dominant mechanics. They're imperative to horizontal movement, the main component of traversal; jumping, as jumping depends on horizontal movement; and they're powerful attack mechanics in their own right.

There's one caveat worth noting. These two approaches assume that the player is only interested in meeting the goal of the game, regardless of all else. ATTACK and DASH ATTACK, however, can take considerable effort and skill to maintain. Whether that be repeatedly pushing a button or dodging obstacles as Wario moves at a consistent max speed. Not all players are going to want to invest. Many are likely to, for example, stick to WALK for traversal and only use ATTACK to defeat enemies. There's no guarantee that the player will use one mechanic any more than they'll use another. However, considering these limitations, it's a fair assumption to say that the player is more likely to use the mechanics which are more in their interests than the ones that aren't, which is the point I've made here. I can only speak for the game itself. This is not a player-centred critique.

ATTACK AND DASH

ATTACK COMPARISON

It's only appropriate that the two dominant mechanics, ATTACK and DASH ATTACK, are tied to the central aspect of Wario's character, aggression. How much the player uses one mechanic over the other significantly shapes their play experience and the finer details of Wario's personality. Is the flow of the game broken at a whim? Does gameplay favour timing or reaction? Does Wario/the player over-invest in anger and succumb to its downfalls? Is Wario/the player reckless or careful with his/their power? These are all questions which we'll come to later, answered by the player's preference to which mechanic and to what degree. For now though, we need to understand the differences between these two dominant mechanics and the types of options they present to the player.

To begin with, a short-hand overview.

ATTACK

Initiation Input: One button press (less physical work).

Maintaining Speed: Repeated button presses (more physical work).

Disadvantages: When maintaining speed, Wario can lapse into the neutral state after the ATTACK animation has ended, before the player's pressed the button to ATTACK again, creating a drag.

Hitting Obstacles: Hitting a wall or regular block causes Wario to bounce back. Hitting an enemy's weak point causes him to return to the neutral state.

Animation Duration: About a second.

Animation Interrupts: Player can press in the opposite direction on the d-pad to cut the animation dead.

Jumping: Medium-sized jumps with a fixed arc where the animation interrupts allow for precision landing.

DASH ATTACK

Initiation Input: Two buttons must be pressed and held simultaneously (more physical work).

Maintaining Speed: Buttons can be held for an infinite duration to maintain speed (less physical work).

Disadvantages: Skidding, dependency on run-up, limited control of animation cancelling, and lack of immediacy when entering the attacking state.

Hitting Obstacles: Hitting a wall or thick block causes Wario to bounce back. Once an attack charge is built up, enemies and level elements are ploughed through without a stop in animation.

Animation Duration: Animation lasts as long as the player can hold the buttons and avoid obstacles.

Animation Interrupts: Before Wario is visibly charged, the player can jump or press in the opposite direction.

Jumping: Longer jumps with a lower arc that can't be cancelled.

And a long-form explanation.

First, to clear up what is probably a misconception. DASH ATTACK'S charge has no relation to Wario's speed, it *only* indicates that he's entered the attacking state. Both mechanics displace Wario at the same speed.

INPUT AND ANIMATION

To initiate a DASH ATTACK, the player must press and hold the left or right arm on the d-pad and one of the shoulder buttons. The two actions diminish the strength of the presses, while pressing the R shoulder button spreads the input over two hands, requiring a bit more dexterity to manage. Inputting DASH ATTACK is thereby more strenuous and complicated, so to speak, than the simple button press of ATTACK. And as such, DASH ATTACK lacks the tactile immediacy of ATTACK.

This lack of immediacy is present in the animation too. ATTACK puts Wario in the attacking state from the first frame, whereas DASH ATTACK takes a second of charging before Wario can defeat enemies, as indicated by the glow and sparks. Because Wario moves when charging, this delay is represented in physical space. That is, Wario needs to be a preset distance away from an enemy before he can build the charge to attack it. Factor in enemy movement patterns, the location of weak points, and obstacles in the level design and DASH ATTACK is much less reliable as a generalist attack mechanic.

MAINTAINING SPEED

A DASH ATTACK can be maintained for as long as the player can hold down the buttons and avoid hitting a wall or hazard (reflex). These are the player's only concerns as once Wario's in the attacking state, regular blocks and harmless enemies are cleared on impact without slowing down his movement.

ATTACK only moves Wario forward for a second before the animation stops. To keep the displacement going, the player needs to continually repeat the mechanic by spamming the B button. The further Wario travels, the more tiring the button mashing becomes. Between one ATTACK ending and another starting, Wario can briefly lapse into the neutral state, creating a drag. Also, unlike the DASH ATTACK, every time Wario hits something, the mechanic ends. ATTACK takes more physical effort to maintain and is more vulnerable to unintended cancellations than DASH ATTACK.

JUMPING

Both ATTACK JUMP and DASH ATTACK JUMP have fixed trajectories determined by the horizontal push of the attacks. DASH ATTACK JUMP is a long jump with a lower arc, great for clearing wide chasms. ATTACK JUMP is shorter jump with a higher arc, better for vaulting over obstacles.

The key difference between the two jumps is that ATTACK JUMP can be cancelled in mid-air, while DASH ATTACK JUMP can't. By cutting the animation, the player can control precisely where Wario lands, instead of it being predetermined, as with the DASH ATTACK JUMP.

SKID

After ending a charged-up DASH ATTACK, Wario skids an extra unit or 2. The skid adds an element of risk to the mechanic. The main reason for the player to break out of a DASH ATTACK is to avoid hitting any potential walls, enemies, or pits in Wario's path. The DASH ATTACK moves Wario at a fast speed, which means that such obstacles come into view quicker than they would if, say, Wario were WALKING. Therefore, when the player sees an obstacle in Wario's path, they only have a limited window of time to react. The skid adds an extra bit of distance to Wario's stop, meaning that the player must react earlier so that Wario can safely come to a halt before hitting the hazard. The skid, in turn, minimises that window of reaction time, further stressing the reflex skills needed to handle the already reaction-heavy mechanic. One way to minimise the mechanic's thirst for reflex skills is to memorise the level layouts, shifting the focus onto knowledge skills. This way, the player knows how to react, before they need to react. DASH

ATTACK is the more challenging of the two mechanics as it's reflex- and knowledge-intensive.

HIGH LEVEL PLAY

DASH ATTACK is also the most sophisticated mechanic in the game. Not only does it have a system of cancels and techniques tied to its animation cycle, but its skid can be nullified in a variety of emergent ways. Let's begin with this image of a complete DASH ATTACK animation broken into its respective parts. Please note that I made the image artificially using sprites, so it's not a pixel-perfect representation.



Here is what happens at each step of the animation. The numbers do not refer to the number of frames.

0 – 2: Wario has no charge. With no charge, there's no skid and no attack. The mechanic ends if Wario touches anything. The player can cancel the animation by JUMPING (jump cancel) or releasing the shoulder button to walk out. A jump cancel cuts to a JUMP and a walk out cuts to a WALK. Wario can walk out at any time, however, in later phases, he does so with a trail behind him. The initial frames of animation have no influence on the cancels at all. So, for example, a walk out is an uninterrupted transition from one frame of the DASH ATTACK to another of WALK.

2 – 3: Wario has built up an invisible charge and is in the attacking state. He soft skids—a quieter, shorter skid without a trail—when ending the mechanic. The charge is “invisible” because Wario's animation is identical to when he has no charge (0-2): there's no perceivable way of knowing that Wario has charge.

The animation can be jump cancelled. If the player holds down on the d-pad in the direction of the DASH ATTACK as Wario's jump cancelling, he'll do a momentum jump (d-pad + A). A momentum jump preserves the momentum from the invisible charge for a long distance jump. The length is determined by how long the player keeps the arm of the d-pad pressed down. So long as the player holds down one of the shoulder buttons when Wario lands, they

can continue the DASH ATTACK from the point before the momentum jump. If exploited properly, the player can build charge as they momentum jump over various platforms and obstacles. The momentum jump maintains the DASH ATTACK'S charge without the skidding or forfeit of control of a DASH ATTACK JUMP. In other words, it has the advantages of a DASH ATTACK JUMP, with none of the disadvantages.

2-3 is only a short window of time. Most players probably won't notice the sequence given that the animation's identical to 0-2. If the player can nail the narrow time frame though, then they can put the momentum jump to good use.

Wario can break blocks and clear enemies during these frames, but not with the momentum jump.

3 – 4: Wario's charge becomes visible. The player can only cancel by walk out, otherwise ending the DASH ATTACK invariably results in a skid. Jumping leads to a DASH ATTACK JUMP.

4 – 5: 4 is where the player ends the DASH ATTACK and Wario starts skidding. 5 is where Wario ends up. From 4 to 5, the player has no control over Wario, leaving him open to enemies and hazards. This phase can be cut short through advanced techniques.

Jump: As has been previously stated, when Wario's DASH ATTACK JUMPING, he's in the attacking state and the player can't cancel the animation. The jump is the most restricted part of the mechanic.

To illustrate these details more clearly, I've tabulated the data below:

	0-2	2-3	3-4	4-5	Dash Attack Jump
Charge	No Charge	Invisible Charge	Visible Charge	N/A	Full Charge
Cancels	Jump Cancel Walk Out	Jump Cancel Walk Out	Walk Out	Advanced Techniques	None
Jumps	Jump	Jump Momentum Jump	Dash Attack Jump	N/A	N/A
Skid	None	Soft Skid	Regular Skid	N/A	Full Skid on Landing
Attacking State	No	No	Yes	No	Yes
Duration	Fixed number of frames	Fixed number of frames	Player-controlled	Dependent on charge/topography	Fixed number of frames, dependent on topography

As we can see, DASH ATTACK is filled with subtle details from which advanced techniques can be developed. Most players probably only pull off these techniques on occasion and without consciously knowing. Speed

runners and veteran players¹ would be more familiar with them though, as they grant greater control over fast horizontal movement. Mastering these moves can make all the difference when shaving seconds off of a speed run. The video in the reference² compiles all the advanced techniques mentioned above, just so you know that I didn't make all this stuff up.

(Momentum jumps are also possible when cancelling a ROLL off a slope).

The skid is unique in that it can only be nullified in conjunction with other game elements. For example, DASH ATTACK JUMPING onto a platform and ending the attack just before Wario reaches the end so that instead of skidding, he falls off the platform, lands on the ground and returns to the neutral state. The ability to nullify the skid sets up some great opportunities for emergence. The video in the reference³ has a few examples from yours truly.

To get an understanding as to the difference cancels, skid nullification, and momentum jumping make to gameplay, compare the two referenced videos⁴. The first is of a player who prefers ATTACK and the second is of a player who prefers DASH ATTACK. Keep in mind that the second video is a tool-assisted playthrough which means that it's easier for the player to pull off DASH ATTACK'S special techniques. It's not a fair comparison by any means, but it does illustrate how advanced use of DASH ATTACK can significantly shift gameplay.

CONCLUSION

ATTACK is easy to input, hard to maintain; puts Wario in the attacking state from the first frame; and allows the player to determine exactly where Wario will land. DASH ATTACK is more difficult to input, easy to maintain; needs to be charged to put Wario in the attacking state; and allows the player to quickly cross large areas through use of advanced techniques. ATTACK is portable, requiring minimal commitment for minimal reward. DASH ATTACK is bulky, requiring significant commitment for significant reward. Based on these properties, ATTACK is the more functional mechanic, suited to average players, while DASH ATTACK is the more specialised mechanic, suited to advanced players.

1 Including authors of ridiculously unnecessary game analysis.

2 Compilation of DASH ATTACK'S Advanced Techniques: <http://youtu.be/Ppjr5G4xwmw>

3 Examples of Skid Nullification: <http://youtu.be/8tMdOj8CS8>

4 ATTACK Player: <http://youtu.be/3T4yilOMU54>

DASH ATTACK Player: <http://youtu.be/5v2GbtDaTYY>

More on Tool-assisted Speedruns: http://en.wikipedia.org/wiki/Tool-assisted_speedrun

DASH ATTACK – ACCESSIBILITY DIMINISHING POWER

DASH ATTACK: a fast sprint boring out of control, clearing almost everything in its wake. Few riders dare steer the untameable beast, but those that do have much to gain. This is the story of how the most powerful mechanic was brought to its knees by specialised pursuits and wild risk/reward. In plainer terms, how DASH ATTACK'S power is diminished by a lack of accessibility.

RUN-UP AND DEPENDENCY ON HORIZONTAL SPACE

The DASH ATTACK'S run-up is its Achilles heel, making it dependent on the level design. In many areas of the game, the lack of horizontal space renders the mechanic inapplicable or unwieldy in application. Below are several examples:

Boss Battles – Although the screen-wide boss rooms offer enough space for a run-up, they're only large enough for Wario to DASH ATTACK into the bottom corners of the room. Considering that most bosses occupy the top of the screen, it's understandable why the mechanic is never called upon in these encounters.

Platforms – Most platforms aren't wide enough for Wario to build up a momentum jump, let alone a DASH ATTACK JUMP. Solid ground is where the length is.

Busy Ground Areas – On the ground, Wario *does* have enough space to DASH ATTACK, but doing so is often troublesome because of the various enemies and level elements that get in his way.

LACK OF CONTROL AT HIGH SPEED

Because of DASH ATTACK'S fast speed and skid, when using the mechanic, objects quickly come into view and the player's forced to react almost as soon as they see them. The speed is too fast for most players to handle over a long distance, unless said distance is specifically designated to the mechanic. Outside of these special cases, DASH ATTACK has limited application.

There are two ways to get a grip on DASH ATTACK: beef up your reflex skills or memorise the level layouts and enemy positions. The former requires more

practice with the mechanic, which is a tough ask given that consistently moving at such a high speed makes it easy to overlook the Keyzer and jewel pieces needed to advance to the next level. The latter, memorisation, is an almost pointless endeavour as doing so means playing completed levels multiple times, which most players are probably unwilling to do. There is a caveat to this though. When the player retries a level after a game over, their knowledge from the prior run is still fresh in their mind. In which case, they'd be more willing to use the DASH ATTACK with the security of knowing what lies ahead.

AS AN ATTACK MECHANIC

Wario moves several units forward before entering the attacking state. This window of vulnerability weakens DASH ATTACK as an attack mechanic as no player wants to send Wario running openly towards an enemy unable to defend himself. Furthermore, factoring the mandatory leeway into Wario's attacks is an unnecessary burden when the player can just move in close and ATTACK outright.

THE TROUBLE WITH ADVANCED TECHNIQUES

Let's face it. Cancels, momentum jumps, and skid nullification are hardly worth the average player's investment. Being tied to sections of animation that occur within the span of a few seconds, it takes some time before the player realises that these techniques even exist, never mind getting a proper handle on them. Despite my own work in this area, I still find it tricky to competently apply these abilities within levels.

SPECIAL CASES

As mentioned, there are specific instances tailored for DASH ATTACK, designed around its strengths and weaknesses. Here are some examples:

- » Post-fold in pure fold levels
- » Backtracking
- » Replaying a level
- » Playing the game on a harder difficulty
- » When thick blocks prevent access to a horizontal path
- » Long stretches of land with few enemies and several blocks in the way
- » Clearing wide chasms

There's enough evidence inherent in the game system to support my thesis that most players prefer ATTACK, however, in the above cases, DASH ATTACK is invariably superior.

CONCLUSION

For all DASH ATTACK'S power and sophistication, it's a complicated, risky, and uncompromising a mechanic, all factors which work to diminish its accessibility. DASH ATTACK is therefore an unattractive mechanic, preferred by speed runners, but otherwise relegated to specific instances. As they say, with great power comes great responsibility.

ATTACK – POWER FLAVOURING PLAY

As *Wario Land 4*'s common verb, ATTACK'S influence on gameplay is significant. Like all powerful mechanics, its various nuances sketch in the details of Wario's personality and define the overall flavour of gameplay. Below are several key examples.

PLATFORMING SKEWED TOWARDS TIMING AND REFLEX SKILLS

ATTACK JUMPING between platforms can be divided into three steps:



1. The player initiates the ATTACK.
2. The player JUMPS.
3. The player cancels and Wario lands.

The player can ATTACK and JUMP at the same time, so steps #1 and #2 can overlap.

Steps #2 and #3 are dependent on timing and reflex skills. When ATTACKING, Wario's speed is constant, thus it takes him a fixed time to cover a set distance. In the case of step #2, when Wario reaches the edge of the platform, the player must press A so that he jumps. In the case of step #3, when Wario's vertically aligned with the subsequent platform, the player must press the left arm on the d-pad to cancel the jump and have him land safely. These actions are about waiting for a certain time to elapse before reacting. Because steps #2 and #3 make up most of the execution and ATTACK JUMP is the dominant jumping mechanic (by virtue of ATTACK being the dominant mechanic), *Wario Land 4*'s platforming is underscored by timing and reflex skills.

As an aside, JUMPING uses more dexterity as the player not only has more minute control over Wario's movement in mid-air, but, because he falls at a fixed speed, the player only has a limited time to nudge Wario in the right position before he lands.

RIGID JUMPING

ATTACK JUMP'S fixed arc—which can't be altered, only ended—makes the jump a static unit, lacking the subtlety of nudging Wario a few pixels to one side with the d-pad.

START-STOP GAMEPLAY

When the player can cut Wario's animation on the spot and has incentive to do so, given the precision jumping, the gameplay loses fluidity and becomes mechanical. This isn't to say that ATTACK breaks the game's flow. Given a lack of true acceleration and momentum, Wario never had much grace in the first place. Rather, the ATTACK mechanic only strengthens the game's focus on the nuance of its mechanics¹ over the organic dynamics of movement.

A ZIPPINESS TO GAMEPLAY

The responsiveness of ATTACK, both in entering the attacking state and cancelling the animation, streaks the gameplay with a jolt of immediacy.

PORTABILITY AND DIVERSITY OF MECHANICS

ATTACK is a portable mechanic in that it's multifunctional, low committal, has a short animation cycle, and can be cancelled on a whim. Being portable, it's ubiquitous, but doesn't consign the player to one play style. Furthermore, because repeatedly ATTACKING requires button mashing and drags Wario's movement, the player is dissuaded from overusing the mechanic. This all results in an inclusive dominant mechanic which encourages a more diverse use of Wario's abilities.

AGGRESSION AT THE CORE

Using ATTACK as a multifunctional mechanic contextually asserts that Wario is dependent on aggression. No matter what he does, the majority of his actions are antagonistic. Yet, through animation cancelling, we see that he has complete control over his anger. The diversity of play spurred on by ATTACK'S portability reveal that Wario is willing to consider more passive actions too.

1 ATTACK, DASH ATTACK, the extension, and swim mechanics all being examples of which.

FAKE MOMENTUM AND STEP ACCELERATION

Wario's movement is like a car which can only travel at either 5, 40, or 100 km/hr. That is, CROUCH WALK, WALK, or ATTACK/DASH ATTACK/ROLL. There's no gradual transition from one speed to another, rather acceleration is modelled in steps. Underwater, Wario can only swim at one of two speeds.

When ending or cancelling an ATTACK, Wario is that same car travelling at 100 km/hr and then stopping on the spot. In real life, the car would skid forward, preserving momentum. Although players can infer through the sound and animation that Wario warms up and cools down at the start and end of an ATTACK, it's all presentation—there's no effect on speed. ATTACK is void of momentum. FORWARD and UPWARD STROKE are exactly the same.

After ending a DASH ATTACK though, Wario skids and the player can see that momentum is preserved. There are two types of skids: soft and regular. Soft skids are shorter than regular skids and only possible when Wario has invisible charge. These properties suggest that the skid's length is related to Wario's charge. As we know though, the charge represents the attacking state, not Wario's speed. So, despite the illusion of momentum, DASH ATTACK only has an artificial form of momentum for the sake of balancing the mechanic.

CROUCH SLIDE employs its own exclusive form of momentum.

As we can see, *Wario Land 4* lacks true acceleration and momentum. The former is a type of step acceleration and the latter is rigid, artificial, and only applicable to DASH ATTACK and CROUCH SLIDE. Just as gravity and charge add a dynamism to JUMP and THROW, acceleration and momentum make movement more dynamic and, in turn, more engaging. By lacking these properties, Wario feels stiff and static. This does, however, play to his character by deemphasising mobility to give more weight to attacks and the transformations. After all, Wario's a big fat guy, he shouldn't have the flexibility of Mario. Strength is his key asset, not manoeuvrability. The absence and faking of acceleration and momentum are a reflection of his form.

CONTROLLER INPUT

~MECHANICAL OUTPUT

The controller—or in the case of portable games like *Wario Land 4*, the game console itself—is a bridge between two worlds, a translator of the tactile language of inputs into the digital expression of game mechanics. These two worlds are interdependent. The way we execute mechanics through button presses, stick rotations, motion, and touch input defines our interpretations of the mechanics. As we play, the physical third body melts away in our subconscious and our understanding of the game becomes a blur of physical inputs and digital outputs. This blur, where the player forgets the controller and sinks into ever deeper immersion, is created through the harmonisation of physical motions and digital functions. For example, turning the controller to turn a key. The input matches the output, and thus feels natural. In this section, we'll explore this particular relationship.

For Wario to JUMP to maximum height, the player must hold down the A button for a fraction of a second longer than JUMPING at minimum height. In these added points of a second, a long time in input speak, we place more weight on the button. Because we interpret touch faster than we count time, we trick ourselves into thinking that the hardness of the press affects the ascent of the JUMP, rather than the duration. This is why we instinctively press the button down harder when attempting difficult jumps—we actually believe it will make Wario JUMP just that bit higher. Since reaching max height requires more physical effort from Wario and the extended button press creates the perception that we, the player, are also exerting ourselves, the input and output are harmonious.

When THROWING a projectile, Wario can charge the THROW by holding the B button a little longer. The longer press, which we interpret as a greater exertion of effort, results in a longer throw. By releasing the B button, Wario makes the THROW. The release of the button correlates with the release of Wario's outstretched arm. Throwing feels natural because of these two properties.

Contrary to JUMP and THROW, when WALKING, holding down the d-pad longer yields no change in Wario's walking speed. This makes the mechanic feel flat and unnatural.

For Wario to ATTACK, the player presses B. Just by pressing a button, Wario travels roughly 115 pixels horizontally, granted he has a clear passage. To WALK 115 pixels, the player needs to press and hold the left or right arm of

the d-pad for a second or 2. The two mechanics cause the same outcome, yet the physical effort needed to perform them is disproportionate. ATTACK therefore feels effective where WALK is arduous and slow.

The L and R triggers of the GBA are akin to car pedals, while the left and right arms of the d-pad are the ignition. It makes sense then that DASH ATTACK—with its fast movement and skid, which have Wario control like a car—is mapped to these buttons. If the player releases any of the buttons mid-DASH ATTACK, Wario reacts just as a car would. Releasing the d-pad, i.e., turning off the ignition, sees Wario screech into a skid. Releasing the shoulder button, i.e., taking your foot off the accelerator, sees Wario revert to a walk.

ATTACK JUMP and DASH ATTACK JUMP ignore the longer-hold-greater-outcome relationship discussed before as pressing A for any duration has Wario jump to his max height. DASH ATTACK does obey this principle though. By the time Wario's visibly charged, the player's press has likely become a firm hold, creating the impression that the subtle shift in input charges the attack.

The position of the triggers creates a tendency for the player to press the trigger to the side of the screen they wish Wario to DASH ATTACK to. However, the player isn't prevented from holding the right trigger to build a leftward charge, and vice versa. This isn't a big deal as the allowance provides the player with more control options and most players aren't likely to defy their natural responses anyway, but it's still a disconnect between input and output nonetheless.

Releasing the down arm of the d-pad has a crouched Wario revert back to his standing state. The release implies that Wario's body automatically springs to a stand after crouching which is not true of regular bodies. Pressing the down arm of the d-pad to CROUCH, where Wario stays crouched when down is released, and up to stand again is more natural as it reflects how humans physically kneel and stand. Yet this also adds input where input isn't needed. The developers chose ease of use over realistic input/output.

When Wario WALKS into a unit passage, he automatically CROUCHES and enters. Without having to press down and left or right on the d-pad to manually CROUCH WALK in, the input implies that Wario is sucked into the passage. As with the last example, the automation's not very natural, but it makes controlling Wario more fluid.

CROUCH JUMPING and CROUCH WALKING are better examples of harmony between input and output. CROUCH JUMP isn't very high. If we look at the inputs, we can see how it's a self-defeating process. For Wario to maintain a CROUCH, the player must hold the down arm on the d-pad, yet

jumping is an upwards-moving action. Pressing down while trying to move up is counterintuitive. The input defines the action.

For Wario to CROUCH WALK, the player must press the down arm of the d-pad and then slide their finger over to either the left or right arm. This mushy slide around the centre of the d-pad is a fantastic representation of the physical awkwardness of walking while crouching.

Have you ever noticed that when you get Wario to SMASH ATTACK, your thumb always ends up a little lower than where you started the press? There are two reasons for this. The first is that when we input a mechanic, we tend to model the button press, stick twirl, touch, hand movement, etc. on the animation of the avatar. The in-game representation of our inputs acts as a visual guide as to how we should interface with the controller. Thus, when we SMASH ATTACK, we slide our thumb down in accordance with Wario's fall. The longer the fall, the lower on the d-pad our thumb will likely end up. The second reason is that the d-pad slants in the direction pressed which combined with sweat, the oils in our fingers, and the increase in applied pressure over time causes our thumb to slip downwards.

For Wario to ROLL down a slope, the player only needs to press the down arm of the d-pad. Wario then animates as though he lost his balance and slipped. The light press on the d-pad adds to the animation, presenting the slide as almost accidental.

SLIDING down a ladder requires the player press the down arm of the d-pad and the B button. The two buttons are separated by the screen which is akin to two hands separated by a head. Mapping the buttons like this helps the player draw the connection between their input and Wario loosening his grip to SLIDE down the ladder.

As Vampire Bat Wario, the player needs to rapidly press A to flap Wario's wings and keep him afloat. The strenuousness of the input corresponds to Wario's form which suggests that his big head weighs him down.

The animation length of UPWARD STROKE and FORWARD STROKE depend on how long the input is held. When the buttons are released during the animation, the animation ends. Whether the player does a full press or rapidly button mashes, Wario's swimming style is a reflection of the player's input.

NUANCE AND THE HIERARCHY OF POWER

Mechanics can be placed in a hierarchy on the scale of power. ATTACK and DASH ATTACK are the dominant mechanics and therefore sit at the top, while CROUCH SLIDE probably falls closer to the bottom. There are, however, mechanics, properties, and emergent techniques which are peripheral to the scale of power. We call them nuances. Here's a definition from the Critical Gaming blog¹:

"Nuance: any effect/property/detail that cannot be placed (or easily placed) on the scale of power of a game. If a game is about moving and shooting, then a quick reloading technique might fall on the nuance side. A technique that helps you evade the radar during a scan is even more nuanced".

Nuances can be organised into tiers based on their apparent relevancy to the game's goal. Deciding what constitutes nuance and on which tier it sits is quite subjective. For example, does CROUCH count as nuance? The goal of *Wario Land 4* is for Wario to reach the end of the level, something which CROUCHING on the spot hardly helps the player achieve. Yet CROUCH is the conduit to CROUCH WALK which at specific instances is needed for Wario to pass through unit-high passages. Without CROUCH, there would be no CROUCH WALK, and with no CROUCH WALK, Wario wouldn't be able to reach the end of some levels. Outside of these few examples though, as a mechanic which halves Wario's height, CROUCH is irrelevant.

Despite these issues, I've done my best to catalogue the nuances. In the case of CROUCH, I've placed it on the scale of power as even though it doesn't always directly help the player get Wario from A to B, it's still necessary in doing so.

1 About That Indie Feel Part 4: <http://critical-gaming.squarespace.com/blog/2011/1/8/about-that-indie-feel-pt4.html>

TIER 1

BUMPING ENEMIES

WALKING into an enemy's weak point to knock it.

JUMP CANCELLING (ATTACK JUMP)

When Wario ATTACK JUMPS, the player can cancel the jump and cause Wario to fall to the ground.

TIER 2

PUSHING GOGGLEY-BLADES

Wario can swim into Goggley-Blades to displace them. This can throw off their movement patterns.

THROWING ENEMIES OFF-SCREEN

The off-screen area is a black hole. Whatever enters is lost forever. Aside from Wario, that is. Enemies thrown more than a unit's length off-screen, through an open entranceway, disappear. Enemies thrown within a unit's length off-screen, get up and walk back into the room.

SOFT AND REGULAR SKIDS (DASH ATTACK)

You know the drill. When the player ends a DASH ATTACK with invisible charge, Wario soft skids. With visible charge, he skids. Wario's soft skid is shorter than his regular skid. The skids are hinderances that add risk to the powerful DASH ATTACK.

LOOKING UP WHEN NOT IN FRONT OF A DOOR

Wario looks up, nothing else.

FORCED CROUCH JUMPING

Wedge in a unit-high passage, Wario can still CROUCH JUMP to nudge the camera slightly.

TIER 3

QUAKE CONTROL

Wario can SMASH ATTACK the ground to cause a quake which allows the player to indirectly move loose projectiles around the level.

USING HELD OBJECTS AS SHIELDS

When Wario PICKS UP a projectile, he holds it above his head. Other projectiles or enemies that then touch what he's holding bounce backwards, with the held object falling out of Wario's hand. The player can use the held object to deflect enemy attacks.

JUMP CANCELS AND WALK OUT (DASH ATTACK)

Before Wario charges a DASH ATTACK, the player can cancel the mechanic by JUMPING or WALKING out. After the DASH ATTACK'S charged, the player can still WALK out.

ROLL CANCEL

As Wario ROLLS down a slope, but before he hits the ground, the player can JUMP to cancel the mechanic before it's set in motion.

TIER 4

SKID CANCELLING (DASH ATTACK)

The player can cancel DASH ATTACK'S skid by ending the mechanic before a wall or the edge of a platform.

Any further tiers would be glitch moves which, from my research and experience with the game, *Wario Land 4* appears to have none of. This obviously excludes ROM glitches and the like.

GAME DYNAMICS

GAME DYNAMICS INTRODUCTION

GAME DYNAMICS

INTRODUCTION

A game dynamic is a variable which influences two or more areas of the gameplay system. These dynamics place restrictions on Wario which make play more engaging and often lead to more emergent gameplay. There are four key game dynamics in *Wario Land 4*.

GRAVITY

What goes up must come down. Gravity's influence in the game system is wide-reaching. It causes game elements to fall downwards, limits Wario's jumps, determines the trajectory of his throws, and sets the main area of play along the ground, among other things.

BUOYANCY

An inversion of gravity that only affects Wario when stationary, buoyancy is what pushes the portly anti-hero up to the water's surface. The dynamic adds a sneaky layer of challenge to swimming. Buoyancy also slows the fall of coins and small hearts.

TIME

Aside from general applications of the time dynamic, such as the time it takes Wario to charge a THROW or slip into the idle state, time is also apparent with countdown timers and the timing of motion. There are two main timers: the post-fold timer and the boss fight timer. The post-fold timer determines Wario's health, level kitty, alive state, and the colour saturation of the visuals. The boss fight timer determines Wario's alive state and how many treasure chests remain at the end of the battle. The timing of movement is a little different. Motion operates in time, so time determines the distance between two game elements. For example, how long it takes an enemy to attack Wario and when a moving platform is in reach.

WEIGHT

Some enemies are heavier than others. When Wario PICKS UP a heavy enemy, his JUMP height, WALK speed, and throw distance are halved. An enemy's weight also determines whether it'll flip over when Wario quakes the ground.

ENEMIES AND INTERPLAY

INTERPLAY ANALYSIS

ENEMIES AS STATIC GAME ELEMENTS

INTERPLAY ANALYSIS

Interplay is the action-reaction, back-and-forth engagement between the player and the game world. When the player or a game element does an action and the other responds, you have interplay. In *Super Mario Bros.*, if Mario jumps on a Koopa Troopa, it will hide in its shell. Mario can then kick the shell to send it careering off into other enemies. These interactions are an example of an exchange of interplay. The more cycles of interplay between the player and a game element, the deeper, more personalised, and thus more meaningful the interactions become.

Most of *Wario Land 4*'s interplay comes from enemies, since they're the only game elements which have the capacity to respond to Wario in a sophisticated manner. This includes bosses, which I cover in their own section. Static level elements only offer limited feedback at best. Most, like platforms, provide none.

Words are a clunky means of demonstrating interplay, so instead, I've assembled a series of diagrams which chart the depth and breadth of enemy interactions. Most diagrams explain themselves, but where necessary, I interject with my own written commentaries.

UNDERSTANDING THE DIAGRAMS

The diagrams are too large and too numerous to include in the book, so please refer to the online portal¹.

Since there are a lot of Marumen variants, let's use their diagram as a starting point. The purple boxes are Wario's actions/reactions and the grey boxes are the enemy's actions/reactions. The five boxes at the top each represent the start of an interplay loop (or the continuation, if referenced), the first action from either party. Because a Marumen bumping Wario is basically identical to Wario bumping a Marumen, I've put them together in the one purple box, rather than having different coloured duplicates. This applies to the other enemies too. The last box in the chain, which doesn't reference another chain, concludes the loop. Some branches end with one party getting hit and the collection of spoils, others end with both parties returning to the neutral state. However, if the chain ends with "See", then the interplay continues until an end is met.

The one exception being if Wario PICKS UP an enemy. When held, an enemy can't respond, so without the potential for reaction, interplay stops. A new

¹ Online Reference—<http://danielprimed.com/interplay-analysis/>

interplay chain begins from the player's subsequent action. I put the purple and grey boxes together to represent the break in the cycle.

The "See ..." boxes don't count as an interaction. For example, "Knocked into wall, See paralysed" and "Paralysed" are one interaction, not two. Don't be confused by this particular example having two parts (the enemy being knocked into the wall and then flipping over, paralysed), they are the one interaction.

Connecting the "See...." boxes does takes a bit more effort on your part, but if the diagrams were presented in full, there'd be a doubling up of information and a ton of clutter. If you follow the individual interactions, it should be clear where the interplay starts and ends.

In regards to the naming of boxes, "Attack" includes any of the applicable attack mechanics. "Bump" is when Wario and the enemy walk into each other. "Bounce to death", "Knocked to death", and "Falls to death" are when the action causes the enemy to hit a hazard, like water, and perish. A wall is a hazard when an enemy is CHARGE THROWN into it. "Touch surface drop" is when the held enemy touches a surface or game element and falls out of Wario's hand. There's no "Falls to death" and "Collect spoils" branch after "Touch surface drop" because it's rare that an enemy knocked from Wario's possession would fall into a hazard. "Attacks Wario" includes both intentional (Wario steps into an enemy's range and takes their attack in order to transform) and unintentional attacks (Wario lands on a Harimen).

Since THROW and CHARGE THROW have identical outcomes, they're grouped together under the one action. The arrow from "Throw" back to "Pick up/Held" is for when Wario throws and catches an enemy before it hits the ground. Because of the return to "Pick up/Held", the loop doesn't represent infinitely deep interplay, but the restarting of the chain.

I've omitted SMASH ATTACKING the ground from the diagrams, unless doing so yields a unique response. For example, changing the colour of a Marumen or revealing a Harimen's weak point. Enemies usually recover from the quake before Wario returns to the neutral state and has enough time to interact with them, so it's difficult to get anything longer than a single cycle of interplay.

Reactions split by a comma or spread over two boxes contain multiple steps locked in sequence. Wario can't interact with the enemy between these steps.

Remember that scene from *The Lion King* where Mufasa explains the circle of life to Simba?

Mufasa: *"You need to understand that balance, respect all the creatures, from the crawling ant to the leaping antelope"*

Simba: *"Dad, don't we eat the antelope?"*

Mufasa: *"Yes, Simba, but let me explain. When we die, our bodies become the grass and the antelope eat the grass, and so we are all connected in the great circle of life"*

Mufasa was actually providing a convenient analogy for enemies and spoils. When Wario defeats an enemy, it drops spoils which the player can then pursue, continuing the circle of interplay. Lost spoils are spoils Wario drops when attacked.

Enemies which have more offensive actions (red Spearman) or respond to Wario faster than other enemies (Totsumen) don't have more interplay, rather, they're more challenging to interact with.

INTERPRETING THE DIAGRAMS

The two key things to look at are the length and height of the diagrams, which visually communicate the breadth and depth of the interplay. The more breadth, the more open the enemy is to interaction. The more depth, the more meaningful the interaction.

Since the player understands enemies through interaction and the diagrams map out the interactions, they make it easy to make sense of the enemies. For example, I've always found Dendens to be an awkward and unrewarding enemy. Looking at its interplay diagram, you can see why. The interactions aren't very deep and the interplay system is an unconventional take on Spearman (adding a proximity-based attack, but missing spoils and the PICK UP branch).

We can also use the diagrams to make conclusions about the enemies themselves. For example, Harimen have deep interplay specialised around a few interactions. This explains why they're rarely organised in large groups (unless there's a convenient means to take them all out at once): it's too time-consuming to defeat one, let alone several.

MARUMEN VARIANTS

MARUMEN

Looking at the Marumen's interplay tree, it's easy to see why they're the template for many of the game's enemies. The interplay is balanced well between breadth and depth, and there are five entry points to interaction, covering most of Wario's mechanics.

Although deep interaction is generally a good thing, it's unnecessary for pawn enemies like Marumen. If they did have long chains of interplay, this depth would 1) be irrelevant to their core function of horizontal contrary motion and 2) slow the game's pacing. Marumen's longest string of interplay is only two layers deep ("Jump on" – "Paralysed" – "Attack" – "Dead" – "Pick up spoils"), which is quite reasonable.

There's also no single chain of interplay too deep to unbalance the distribution of depth and specialise the enemy around a particular set of interactions. With a broad set of entry points and sufficient, evenly-spread depth, Marumen are accessible, inoffensive, and yet reasonably deep enemies.

SPEARMEN

Spearmen are identical to Marumen, except that they can hurt Wario. In this way, they're slightly more open to interaction, even though said interaction isn't in the player's interest. Red Spearmen pursue Wario when he's in range, which adds a branch of depth and breadth, making them more reactive. (The red Spearmen boxes can connect to the front of the other starting actions).

PET BOTTLE, TOY CAR, DICE MEN, AND IMOMUSHI

PET Bottles and Toy Cars are identical to yellow Spearmen, bar the colour changing. Dice Men are identical to PET Bottles and Toy Cars, sans spoils. Imomushi are Marumen, but can't change colour.

MOGURAMEN

Moguramen are similar to red Spearmen. The Marumen's colour switching and Moguramen's projectile attack are the only differences. The "Bump up to the ground" box connects to the initial interactions above ground.

MEN'ONO, ONOMI, AND TOTSUMEN

Similar to yellow Spearmen, but their exclusive chain of interplay, the charge attack, is more fleshed out than the Spearmen's colour switch. This string makes the three enemies some of the most accessible and interaction-rich in the game. The difference between Totsumen and the other two is that Totsumen keep dashing forwards until they hit a wall or die, while Men'ono and Onomi stop.

DEBURINA

Identical to yellow Spearman, minus the ability to be bumped or change state. Because of their dress which protects them on both sides, Deburinas are the most closed enemy in this category.

RINGOSUKI, BOW BALLOON, MENHAMMER, AND YUKIOTOKO

The first three enemies have identical interplay, similar to a yellow Spearman, but with a proximity-based projectile attack and no spoils or colour swapping. As with all enemies that have proximity-based attacks, most interactions are likely to begin with Wario entering their range. Yukiotoke are identical to the others, but they drop spoils.

UNIQUE ENEMIES

HARIMEN

Harimen's interplay is concentrated around two interactions ("Smash attack ground" and "Jump from beneath"). There are only a few ways to interact with the spiked enemy, but the interactions themselves are quite deep, which leads the player to spend more time with Harimen than they would most other enemies (to both figure out how to defeat them and then defeat them). The enemies therefore hold more weight in the arrangements, which is why they're used sparingly as opposed to the ubiquitous Marumen variants.

HARIMENZETTO

Throwing a projectile only paralyses the Harimenzetto, centralising interaction around a single entry point. They are even more closed than Harimen.

TOGEROBO

The "Spiked head rolls off" box connects with the starting interactions of the "Heads off" section, which can form interactions that go four layers deep ("Move in close"–"Spiky head comes off"–"Jump on weak point"–"Paralysed"–"Attack"–"Dead"–"Collects spoils"). Not only does the Togerobo have the deepest interplay of all enemies, but, with its head off, it's also the most accessible.

"Avoid spiky head" is on its lonesome because Togerobos don't respond to Wario dodging the spiky head. If Wario avoids by jumping and then landing on the headless Togerobo though, the interaction is "Jump on weak point"

DENDEN

Denden's interplay is a twist on the common Spearman. The enemy has a proximity-based attack, doesn't drop spoils, can't be PICKED UP, and SMASH ATTACKING the ground, as opposed to jumping on its weak point, paralyses the snail. These mixups make Denden a subversive enemy. There are many ways to interact with the enemy, but none are particularly deep.

IWAO

Like the Togerobo, Iwao has the deepest chain of interplay in the game. Unlike the Togerobo, this chain is the central strand of interplay. So, although both enemies allow for deep interaction, it's more likely that the player will engage deeply with an Iwao than a Togerobo. The Iwao's space-filling boulder throws and dominating presence in Fiery Cavern also lead the player to follow the enemy's core interplay string.

KAETSUBO

Similar to the Ringosuki and friends, but with some interactions missing due to the fragility of the vase. The enemy's interplay is representative of form fits function.

BEEZLEY

Beezley's deep interplay is unique in that it leads to more choice, not less. The bee's core interplay chain widens with more interaction. We can also see how the counterpoint with the flower bud creates deeper interplay.

SKELETON BIRD

Two solid threads of interaction. Like Beezley, but the interplay is more evenly distributed.

UNDERWATER ENEMIES

Underwater enemies have less interplay than land enemies as Wario has fewer mechanics at his disposal underwater and, since Wario and the underwater enemies can move along both axes, it's harder for the two parties to get into the right position to interact. Underwater enemies with more than three cycles of interplay would only congest the pace of the game.

GOGGLEY-BLADE

Spreading the Beezley's interplay a bit thinner.

SHIERAGUTCHI

Shieragutchi's weak point is only accessible through interaction. This lock elicits deeper interplay with the enemy.

TOBAWANI

Tobawanis have the interplay needed to meet their simple role of disrupting Wario's horizontal movement. The reason for the separate "Attacks Wario" string is because the crocodile can also attack Wario underwater.

ENEMIES WITH MINIMAL INTERPLAY

SPIKES, ICICLES, TOGENOBI, PENCIL SPIKES, SPIKY BALLS, HAMMERHEADS, SNOW CLUMPS, AND PIG HEAD STATUES

These enemies don't have interplay. Their role is not to elicit interaction, but to define areas of risk or allow Wario to transform.

HAYBALLS

No interplay cycles, only reactions. When Wario's in range, a Hayball falls from the sky. If he ROLLS into one, the enemy perishes. If he touches one, he loses health.

ROBO BIRD

Identical to Hayballs, except that the enemy flies towards Wario when he's in range and Wario can jump on its head to defeat it.

SPARKIES/SPARK BOXES

No interplay cycles, only a reaction. When Wario's nearby, a Spark Box drops Sparkies.

MAYU BIRD

Identical to Robo Birds, but they fly upwards when bumped and don't have a proximity-based attack.

MINICULA

Minicula has no interplay, only a reaction. Touch him and transform.

UTSUBOANKO

Utsuboanko has a proximity-based attack.

BUTABI

The same interplay as a Mayu Bird, except for being knocked and dropping spoils. Butabi's interplay takes a backseat to its sophisticated attack pattern.

YUREI

Wario can only interact with Yurei by luring him out with coins or reclaiming the Keyzer after it's been stolen. Yurei's swoops don't appear to be determined by whether or not Wario's in range. More interplay would only put unreasonable stress on the player post-fold, as they try to avoid the pirate ghost and reach the vortex in a limited time.

HOGGUS

No interplay cycles, only reactions. Hoggus moves to the left- or right-hand side of the screen depending on which direction Wario faces. If Wario positions Hoggus behind a foregrounded object, the pig artist can't spawn enemies.

CONCLUSION

Wario Land 4's enemies have different models of interplay depending on their role in the game. Togerobos and Iwaos have the deepest interplay, while inanimate hazards like spikes have none. Some enemies, like the former two, are centred around interaction. Other enemies have their own quirks which negate the need for deep interaction. Examples include tricky movement patterns (Robo Bird), a large attack range (Butabi), blending into the environment (Utsuboanko), and the ability to spawn enemies (Hoggus). Adding more interplay to these enemies would only detract from their core function. Togerobos have the most entry points to interaction, making them the most accessible enemy.

The deeper the interplay, the more weight the enemy constitutes in the level design, and the fewer of them tend to be present in levels. The majority of enemies sit in the middle of deep and shallow interplay as derivatives of Marumen. The advantage of having a shared model of interaction for common enemy types is that the player can transfer knowledge of one enemy to another.

There are two trends in the distribution of interplay amongst Marumen variants and uniques:

1. The deeper the interplay, the narrower the interplay tree.
2. The shallower the interplay, the wider the interplay tree.

The result is a mixture of enemies which are either accessible or specialised around a fixed set of interactions. The designers made sure to offer an even

spread of both types.

ENEMIES AS STATIC GAME ELEMENTS

As the interplay diagrams showed us, there's a great deal of interaction between Wario and the enemies. Interaction between two enemies or enemies and level elements though is minimal. Here are some examples:

- » Enemies don't walk into other enemies, but *pass* them. When two enemies meet, one occupies a front layer and the other a back layer as they carry on independent of each other. Once the pair have crossed paths, they magically share the same plane again. Or at least this is the visual inference given the 2D perspective.
- » Perhaps *Wario Land 4*'s biggest mystery: enemies touch certain level elements, but not others. For example, a Marumen will walk past a jewel piece chest, but turn around when it touches a block.
- » Enemy attacks can only hurt Wario. They have no influence on other enemies. After all, when enemies meet, they jump to different layers, so it's impossible for them to attack each other. When the player intervenes though, the rules change. If Wario holds an enemy and another enemy, say a Beezley, tries to attack Wario and hits the held enemy instead, then the held enemy will be knocked out of Wario's hand. Also, when Wario throws one enemy at another both die.
- » Level elements are unaffected by enemy attacks, aside from Beezleys stinging flower buds.
- » Land enemies are generally bound to flat surfaces and platforms. When they reach the end of a platform or a disruption in the topography, they turn around and head the other way. Totsumen, who can charge off platforms, and Men'ono and Omoni, who can walk up slopes, are exceptions to the rule.

Enemies aren't influenced by water currents or conveyor belts. What all these rules equate to is the restriction of potential emergence (richer, more organic gameplay). *Wario Land 4* is only truly emergent when it chooses to be, such as when Yurei chases spoils, a Beezley gets caught on a flower bud, or Wario traps Hoggus behind a foregrounded element.

Alas, at some point there has to be a cut-off. Not every piece of the game can interact with every other piece. If they could, then enemies would transform, walk their way into water, and attack each other before Wario

even arrived on the scene. Absolute interactivity would break the game. *Wario Land 4*'s cut-off point is perfectly reasonable, however, it does isolate enemies from the world around them, making them static creatures governed by strange rules with particular exceptions.

PSYCHOLOGY AND ENGAGEMENT

PRINCIPLES OF ENGAGEMENT

SELECTABLE AND SCALABLE DIFFICULTY

HEALTH AND HEARTS INTRODUCTION

REWARDS, PUNISHMENT, AND PSYCHOLOGY

PRINCIPLES OF ENGAGEMENT

Fun is a tricky subject. One that I've avoided in this book because of its subjectiveness and general misuse. I'm not in a position to tell you whether *Wario Land 4* is a fun game or not. Maybe what you find fun and what I find fun are completely different. Maybe I like scraping gum off the bottom of my shoes and you like collecting toe nails. What we can talk about though is engagement.

The dictionary on my computer defines engagement as "the act of being engaged", with "engaged" meaning "busy, occupied". The verb engage returns a more agreeable meaning:

occupy, attract, or involve (someone's interest or attention)

In respects to this book, engagement describes the player's concentration of attention towards the game.

All games are, to some extent, engaging. The player inputs data and the console outputs animation. Ta dah! Such rudimentary interaction can't hold the player's attention for long though, so the designers add mechanics, challenges, and an interesting context. Yet, all this content by itself doesn't automatically guarantee player engagement. What the game needs is devices which extend the qualities of its good base design.

Outside of the following examples, *Wario Land 4* would be an amusing game. With them, it's supremely more engrossing.

RISK/REWARD

Risk/Reward is effectively a trade of capital: do something risky in exchange for a possible reward. More risk means a greater chance of failure, which encourages the player to concentrate more on what they're doing.

Risk and reward work better when used in conjunction, otherwise without risk, rewards would be meaningless and without reward, there'd be no incentive to put Wario at risk. That's not to say that they can't work independently. Levels become more difficult, and thus "*riskier*", near the end of a passage, creating a difficulty curve. Rewards, like crystals, are often positioned in easy reach to draw the player's attention.

TIMERS

Navigating a couple of platforms is easy enough. Navigating said platforms within a fixed time limit is more engaging as with less time, the player is forced to think and react quicker. The post-fold is a staple example of a timer increasing engagement.

Enemies walking along platforms are timers too. As walking threats, the position they occupy determines the hazardous space. Since an enemy's walk is constant and unending, as they turn around and walk the other way on reaching the end of a platform, every X number of seconds they cover a certain area. Their control of hazardous space therefore runs on a timer. When jumping to a platform with an enemy on it, the player needs Wario to land where it's safe, away from the threat. The time that the nearest available space for Wario to jump to is free is dependent on the timer of the enemy's walk. Judging the enemy's timer adds another variable to platforming.

Lava geysers in Fiery Cavern are another example. The geysers cover the area between platforms, rising and falling at set intervals. The player needs to wait for the lava to drop low enough before they can make the jump.

Many transformations have timers which govern their use. Completing an arrangement when transformed is therefore tricky as the player must often not only tackle the arrangement, but also work within the time constraints imposed upon them.

Platforms that crumble, icicles that fall, and crushers that slam the ground all operate on timers. They're everywhere!

TWO THINGS AT ONCE

Simple test that we all did when we were kids. Pat your head. Rub your tummy. Do both at the same time. Now try alternating between the two actions. Notice how it takes more concentration to do two things at once? The brain has to juggle two independent tasks at the same time. *Wario Land 4* liberally applies this principle to its gameplay.

The most common combination is moving + something else. For example, carrying a projectile while avoiding enemies and the ceiling. Hoggus, the Lakitu-like enemy from Doodle Woods, and Yurei, the pirate ghost from Crescent Moon Village, were designed around this principle as they distract the player while they move through the level.

MODIFICATIONS TO MOVEMENT

Wario's movement can be influenced by internal and external forces which the player needs to manage as they manoeuvre him, effectively doing two things at once. Transformations are an example of internal forces. They can give Wario faster movement (Flaming Wario), constant ascent (Puffy Wario), and swaying falls (Flat Wario). Currents and conveyors are examples of external forces. They create motion in a particular direction.

CHARGING

Holding a button has a time element that differentiates it from pressing a button. In *Wario Land 4*, holding a button usually creates a charge. JUMP, CHARGE THROW, DASH ATTACK, FORWARD STROKE, UPWARD STROKE, and HEIGHTENED SMASH ATTACK all involve some form of charge. Determining how much charge is needed, predicting the duration of time necessary to build the charge, and factoring it into play makes using a mechanic more engaging.

DASH ATTACK AND THE SKID

After Wario ends a DASH ATTACK, he skids a short distance. Determining when to cut the mechanic so that Wario stops before he hits an obstacle, which involves accounting for the skid's distance as he's moving, is highly engaging.

CHANGING SPEED

ATTACK, ROLLING, and DASH ATTACK increase Wario's speed and therefore the speed at which objects come into view. By speeding up the game, the player needs to pay more attention to incoming obstacles.

CHOICE

For jumping, attacking, and horizontal movement, the player has several mechanics to choose from, each distinct enough and with its own pros and cons to offer meaningful choice. Deciding which mechanics to use, and where and when to use them, has the player think about the game more deeply.

CONTRASTING PATTERNS

The brain loves to crunch and compare patterns. The folded level design plays into this by offering the player two instances of a level and then using the discrepancies to hide secrets and guide the player.

AIMING

Aiming in 2D space requires the player to mentally draw a line between the object and target, similar to how one predicts shots in pool. This process of the brain connecting two disparate objects through space is inherently engaging. The player aims when throwing projectiles, ATTACK JUMPING enemies, and head-butting blocks from underneath.

When Wario or the target or both are moving, the player must constantly readjust their imagined trajectory. When the target or object momentarily leave view, the player must remember their location (short-term memory skills). These examples, among other factors like the timing of charge, increase the challenge of aiming.

GOOD GAME DESIGN AND GOOD DIFFICULTY

As players, we want to play games which are tough, but fair. When a game is too easy or too difficult, we don't feel very involved and lose interest. Perhaps we even stop playing. Balanced and fair difficulty keeps the player attentive. Accessible mechanics, a coherent tutorial, and clear goals ensure that the player always understands what's expected of them. With good design, the player's focus is always on the task and not on any minor issues which may disrupt play. As I mentioned in the introduction, good game design sits as the basis of engaging gameplay.

SELECTABLE AND SCALABLE DIFFICULTY

Think of a game you've played that's well-designed, but too easy. Did you play that game for very long? If you did, did you really care about the game or were you just trying to get through it for completion's sake?

Now think of another game you've played which is also well-designed, but too difficult. Did you play that game for very long? If you did, did you really enjoy the game or were you always butting heads with it?¹

As we know, difficulty is directly tied to engagement. If a game is too easy or too difficult, then players become unengaged and lose interest. The game designer wants to keep the difficulty curve just above the player's skill level, so that they feel challenged, but never defeated. Player skill ranges vastly though, making it difficult to pin down this sweet spot. There are two common approaches to address this issue: a difficulty select option and difficulty which the player can scale through play. *Wario Land 4* uses both.

SELECTABLE DIFFICULTY

Wario Land 4 has three difficulty levels, although most players are probably only familiar with the default normal difficulty as it's the only option available on the first playthrough. Once normal is completed, hard opens up, and after hard is super hard. Since the player can't choose the difficulty from the outset, hard and super hard are more like additional challenges for players who finish the game as opposed to a genuine difficulty select. This is perfectly fine as the levels are optimised for the enemy, reward, and floating heart density and positioning of normal mode.

The difference between each of the difficulty levels are:

- » More enemies
- » More dangerous enemies
- » Shorter post-fold and boss battle timers
- » Items in the item shop are more expensive
- » Jewel piece chests are rearranged with silver chests and diamonds
- » Wario starts levels with four hearts on hard and one heart on super hard

¹ My two picks are *The Legend of Starfy* and *Bit.Trip.Beat*.

- » Some purple pipe puzzle rooms are altered
- » The cheerleader takes the role of the pitcher in Wario's Home Run Derby
- » Less time to select facial features in Wario Roulette

Hard and super hard are considerably more difficult than normal, and can be downright frustrating at times. The levels aren't designed around the higher enemy density and as a result:

- » The game's pace plummets to a chug as the flow is consistently broken by enemy encounters
- » The balance of attack, traversal, and jumping skews unfavourably towards attack
- » It takes more time to complete a level, making the game less suited to portable play
- » DASH ATTACK has less power as more enemies clog the runway

Rather than enforcing deeper engagement, the repetition and inane ubiquity of more enemies dissuades the player from interaction. Repositioning or replacing enemies with stronger variants is a better solution as it rebalances the power relationship between Wario and the enemies without affecting the game's pace or cluttering the level design.

Similarly, rearranging the jewel piece chests, shortening the post-fold and boss battle timers, and reducing Wario's health are good methods of increasing the difficulty. The rearrangement of jewel pieces sees the yellow chests trade places with diamonds and music CDs. Thus, what was optional on normal is mandatory on hard and super hard. The player's knowledge of the jewel piece chests' locations on normal works against them as a red herring that requires further knowledge and adaption skills to overcome. That's not to say anything on the challenge of finding the chests.

The shorter timer forces the player to make better use of Wario's abilities; have a clearer understanding of the level layouts, mechanics, and bosses; and further exert the relevant skills so as to reach the vortex or defeat the boss in time.

With less health, the player is encouraged to collect more hearts and take greater care when dealing with enemies. This involves being more observant of heart locations and enemy behaviour, playing out full interplay loops with enemies, and pursuing spoils and floating hearts, even when doing so is inconvenient.

In each of these three examples, the higher difficulty ensures higher engagement.

SCALABLE DIFFICULTY

Some games are challenging for all players despite only having a single difficulty option. The *Mario*, *Metroid*, and *Zelda* games are good examples. How is it that these games are engaging for both new *and* experienced players? Scalable difficulty.

Each of these franchises provide a base level challenge which all players must overcome as well as opportunities for more experienced players to exert themselves in a variety of ways. The base level challenge is to display competence in using the core mechanics by progressing through and eventually beating the game. As for increasing the difficulty, in *Super Mario Bros.*, the player can collect coins, find secret warp zones, and speed up the game through Mario's run. *Zelda* has collectable heart pieces, upgradable inventory, and other trinkets gained from participating in side quests and mini-games. The player's completion rate and time are the key factors of *Metroid's* scalable difficulty.

Scalable difficulty allows players to organically adjust the game's difficulty in real time. Not only does this method give them more control over the difficulty level, as they can choose when and what to scale (game speed, enemy interaction, secrets, etc.), but by tailoring the experience, the player feels a sense of freedom and ownership over play. Furthermore, games with scalable difficulty and no difficulty select run players through the same core gameplay, which makes it easier for them to relate their play experiences with one another.

As with *Mario*, *Zelda*, and *Metroid*, *Wario Land 4* has an assortment of devices that allow the player to scale the difficulty to their needs. Here are some examples:

CRYSTALS

Collecting crystals requires an extra bit of effort, whether that be making a risky jump, jumping in a particular fashion, diverging off the main path, or leaving Wario vulnerable to an enemy attack. Their plentifulness ensures that there are almost always opportunities for the player to try a little harder.

SPOILS

Similar to crystals, however, because spoils are dependent on the level's topography, the effort involved in collecting them can vary significantly.

SECRETS AREAS

Finding secret areas requires the player be more observant whilst they play. Diamonds, music CDs, heart medallions, and purple pipe puzzle rooms reward them for their extra effort. Each level contains a music CD, two purple pipe puzzle rooms, five or six diamonds, and there's a one in two chance of a heart medallion showing up. This consistency assists the player in seeking out the additional rewards.

PURPLE PIPE PUZZLE ROOMS

Purple pipe puzzle rooms offer two tiers of scalable difficulty: finding/reaching the pipe and completing the challenge. The puzzles test the player's understanding of the game system. The player is free to attempt or ignore them.

LEVEL KITTY – COIN UNITS

Each stage has its own level kitty, a numeric value representing the coin units of all the rewards gathered. On completing a stage, the level kitty is added up and given a crown ranking. The player can scale the difficulty by pursuing a platinum crown, the highest rank.

LEVEL KITTY-HEARTS

At the end of a stage, Wario's remaining hearts are added to the level kitty. This motivates players to avoid enemies, grab all the floating hearts and spoils, and maintain full health for as long as possible.

LEVEL KITTY-TIME

Similarly, the amount of time left on the post-fold clock translates into coin units and is added to the kitty, encouraging the player to reach the vortex as quickly as possible.

GLOBAL KITTY – TIME

The length of remaining time on the boss battle timer determines the number of treasure chests rewarded to the player, and ultimately the game's ending.

SPEEDING UP THE GAME

I feel like I've mentioned this one at least a hundred times already. When Wario ROLLS, ATTACKS, or DASH ATTACKS objects come into view quicker, putting stress on the player's reflex skills.

HEALTH AND HEARTS

INTRODUCTION

Being on the Game Boy, the *Wario Land* games are rarely given credit for their contributions to the platforming genre, which include branching story paths, a day/night cycle, and folded level design. In my mind though, the series's trademark innovation is Wario's inability to die in *Wario Land 2* and *3*. Instead, he either loses coins or transforms into another state. Touch fire? He's Flaming Wario. Get crushed by a falling weight? He's Flat Wario. Most of the transformations from prior games have carried over into *Wario Land 4*—immunity from death hasn't.

Although Wario doesn't really die per se, does he? Being attacked by any enemy or touching its offensive point causes him to lose a heart, some coins and recoil. An alarm noise plays when he's down to one heart. Lose that and Wario's sent out of the level and must retry from the beginning. So, dying in the sense of being forced to retry a level—a punishment—has been reintroduced. This means that health is pretty important then. Let's talk some more about that.

Health can be restored by picking up small hearts, floating hearts, or a heart medallion. A small heart adds a unit to the heart gauge. When eight small hearts are collected, the meter is filled up and one of Wario's eight hearts is replenished. A floating heart tops up one of the eight, while a heart medallion heals them all.

The availability of these healing items depends on how much health they restore. Most enemies drop a small heart when defeated. Each level has five or so floating hearts, while there are only two or three heart medallions per passage.

So, one heart medallion = eight floating hearts = sixty-four small hearts or, in terms of labour, finding a rare item = jumping to grab eight common items = beating sixty-four enemies and collecting their spoils. The last two don't really add up, do they? That's because of their role as healing elements.

Heart medallions reward players for exploration. We know this because they're hidden in secret areas. Small hearts get the player chasing spoils, so as to add another layer of interaction to enemies, even once they've perished. We know this because they fly out from defeated enemies and bait the player (see [Rewards](#), [Punishment](#), and [Psychology](#)). Floating hearts support the player with regular health recharges and challenge them to take

small risks. We know this because they're evenly placed throughout levels, heal a significant portion of Wario's health, and are often suspended above hazards and the like.

To keep players engaged, the game needs to provide enough risk for them to feel challenged, but not so much that they're egos are beaten in. A steady stream of health refills allow the player to rescue themselves from potential game over without diluting the threat of enemies, keeping the difficulty equilibrium in check. This is why getting floating hearts requires less work than small hearts. You can't put the player at constant risk of losing health without providing some form of safety net.

Floating hearts are positioned to both support and challenge the player. Let's take a look at a level (The Curious Factory) to get a better understanding of these roles. The map in the reference should be of some assistance¹.

In the first room, nabbing the floating heart is risky as the player must simultaneously avoid the Togero and deal with the conveyor belt. In the second room, the floating heart is isolated in a separate alcove, requiring a smidge of observation. In the fourth room, the floating heart is just above the entranceway, almost directly in Wario's path. In the fifth room, it's easy to overlook the floating heart as the conveyor platforms lead directly to the through platform. The player needs to broaden their scope of observation a little bit and work against the conveyors. In the sixth room, the player needs to transform into Flaming Wario to break the fire block and claim the floating heart. In the seventh room, the two floating hearts are difficult to avoid. Overall, four floating hearts support the player while three challenge them, so their roles as trials and aids are split at a rough fifty-fifty.

¹ Curious Factory Map: <http://danielprimed.com/wp-content/uploads/2011/04/curious-factory.png>

REWARDS, PUNISHMENT, AND PSYCHOLOGY

Video games are exercises in cooperation between game designers and players, based on mutual trust and like expectations. Game designers offer an experience and players offer the agency to pilot that experience. The player trusts that the game designer will teach them the rules and mechanics of the game and provide a rigorous and enjoyable challenge. The game designer trusts that the player will cooperate with them in order to achieve these things. The player consents to the game designer's manipulation and control in the belief that it is in their shared interest, even though this puts them in a position of subordination. Video games are an inherently coercive art form.

The game designer has two main methods of controlling the player: rewards and punishments.

REWARDS

SPOILS

Spoils are goodies left for the player after they complete a minor task. They come in four flavours: those dropped by defeated enemies (regular spoils), those dropped by Wario after taking damage (lost spoils), those dropped from broken blocks (block spoils), and those from opening chests (chest spoils). The player only has a limited time to claim fallen spoils before they vanish.

(Regular) Spoils – Since there are more enemies than blocks and chests, enemy spoils are the most common variety of drops, which is why they're just called spoils. They consist of a coin and a small heart. Not all enemies drop spoils, but most do. Bosses and enemies in the boss room never drop spoils. The unit value of coins dropped depends on the difficulty of the enemy.

Spoils fly out of enemies in the opposite direction to which Wario attacked them. Once they're in the air, they're at the mercy of gravity. Although they fall slower in water, thanks to buoyancy, spoils aren't affected by other external force, such as currents and conveyor belts. Because all of Wario's attacks displace him at the same speed, the speed at which spoils burst out from enemies is also constant. Every action creates an equal and opposite reaction.

Spoils are pretty meagre rewards, but they're frequent, due to the abundance of enemies, and only require minimal effort to pick up. In most cases, the player only has to move Wario a few extra steps to nab the coin and small heart. The effort is worth the reward. The relative ease in attaining spoils and the assurance that practically every enemy will drop something coerces the player into automatically collecting every drop, guaranteeing repetition.

The culmination of consistent spoil chasing is significant. If there are sixteen enemies in a level and the player collects all the spoils, they will have healed two hearts and amassed a nice wad of cash. Sometimes two hearts can be the difference between saving or wasting 10 minutes of game time, while the bonus coin units can turn a gold crown into a platinum one. Within the logic of the game then, repeatedly pursuing these drops is a rational thing to do. So, through the use of spoils, the game designer coerces the player into consistently making short-term efforts for long-term goals.

There's another aspect which drives us to collect spoils. Because we bring spoils into the world, by way of defeating enemies, we consider them to be our responsibility. This feeling is perpetuated by the brain's want for 1) cleanliness and order and 2) completion. The former is the same compulsion that makes *Tetris* so addicting, while the latter is what drives us to acquire collectables and earn achievements. The spoils represent both clutter, drawing on the first driver, and evidence of incompleteness, drawing on the second driver. This gives them a powerful psychological pull.

Spoils may not be the randomised rewards of a Skinner box (see: MMO and social games), but they still have an unpredictability to them, where they land. When spoils fall between cracks, off a high platform, or into water, the effort required to retrieve them is multiplied. Because the way spoils fall is determined by the player (which direction Wario attacks from) and natural causes (gravity, the area around the enemy), wayward spoils which fall out of reach never feel cheap. Since spoils often fall astray, the player's commitment to these rewards is regularly tested and they're challenged to respond to their trained behaviours.

Lost Spoils – Wario drops lost spoils after taking damage. Unlike regular spoils, there's no small heart and the coin(s) is taken from the player's level kitty. This is a punishment, after all. The amount of coinage dropped depends on the difficulty of the enemy. Wario doesn't drop lost spoils when the level kitty is nil.

The psychology behind lost spoils is different to that of regular spoils. Instead of coercing the player to make consistent short-term effort for long-term gain, lost spoils persuade the player to acknowledge fault and “correct” a mistake. Assuming everything in *Wario Land 4* is fair and good, when Wario gets hurt, the player should feel that it’s their own fault. Since the coin(s) Wario loses fall out next to him, the player can reclaim them to undo some of the loss of being hit. In this regard, recovering lost spoils is an act of redemption which, through action, confesses to the mistake of allowing Wario to get hurt. Although collecting lost spoils is positive within the game world—after all, if you could partially undo a mistake, why wouldn’t you?—psychologically it’s an admission of guilt.

Block Spoils – Block spoils are randomised coin drops hidden inside blocks. Breaking blocks is an inherently motivating interaction as the feedback is satisfying and the player can freely modify sections of the environment. To change the game world is to personalise it, which creates a sense of ownership over play. Block spoils psychologically reinforce the player’s motivation to break blocks. They reward the player in both coin units and added visual flair.

Chest Spoils—Chest spoils are coin drops from opened chests. Every chest, even if the player already took what was inside on an earlier run, drops a gold coin. Chest spoils reinforce the positive nature of claiming a reward.

CRYSTALS

The implication behind crystals is the same as spoils. If they’re so easy to get, then why not just go ahead and grab them? The difference though is that crystals aren’t attached to defeating an enemy or Wario taking damage. Therefore, the player doesn’t feel obliged or guilted into collecting them, they pursue the floating rewards because they choose to. Since crystals don’t exploit our mental compulsions, the psychological pull is weakened, but the feeling associated with the action is more positive. At least, in some cases.



Notice how crystals are placed in Wario's path? It's inevitable that the player will take some and leave others as they make their way through a level. By the time Wario reaches the fold, the stage is filled with markedly incomplete sets of crystals. Because the player *breaks* the neatness of perfectly-arranged crystals and only collects *some* of them, they may feel it their responsibility to remove the clutter and complete the process. The psychology is identical to regular spoils. The pull isn't as strong though as, unlike regular spoils where the player chooses to defeat an enemy, they can't help but leave lines of crystals incomplete.

DIAMONDS

Diamonds are catch-free, only found individually, and worth 1,000 coin units, so they have a positive psychology and strong pull.

TREASURE (CHESTS)

Treasures are identical to diamonds, except that they're more elusive, giving them an even more positive psychology.

FLOATING HEARTS

Because health determines Wario's alive state and floating hearts are the most reliable form of restoring health, collecting them is a necessity. The mindset then is one of dependence. Floating hearts are often placed alongside crystals, drawing on the player's attraction to the blue and red rewards to train them in the good practice of keeping Wario's health full at all times.

PUNISHMENTS

Where rewards praise the player for complying with the game designer, punishments scold them for their disobedience. The psychology of punishments is obviously negative then. Punishments are either hard or soft, depending on how much of the player's progress they can undo. Hard punishments can force the player to restart a level. Soft punishments can only force the player to restart a select portion of gameplay or increase the likelihood of them having to restart a level. I tend to think of soft punishments as convenience or time punishments.

HARD PUNISHMENTS

- » Losing hearts

Soft punishments

- » Losing time (for example, falling off a ledge)
- » Losing coins

Each level starts out with a high frequency of hard punishments and slowly transitions to a high frequency of soft punishments. Early in a level, hard punishments are needed to facilitate restricted practice, so the game designer can introduce the game idea with minimal interference from the player's agency. The threats enforce compliance. Late in a level, soft punishments are needed to facilitate freer practice, so the player can take ownership of the game idea. Weaker threats allow for experimentation and exploration within the confines of general obedience.

Because health is the most discrete way of measuring how close the avatar is to death, we tend to consider losing health as the strongest form of punishment. When the player only has 30 seconds left on the clock before Wario's kicked out the level and they miss a jump, it's hard to gauge the significance of the fall. The player doesn't know how much level is in front of them, what changes have been made by the frog switch, or how quickly they'll get through the next room. Furthermore, calculating the impact of such a mistake would only waste more time when the player's already under the gun.

Soft punishments are as strong as hard punishments when time is directly related to Wario's alive state. That is to say, post-fold. In fact, soft punishments are superior post-fold as the player can't easily quantify the extent of the penalty.

When time doesn't correlate to Wario's immediate death, losing it is a matter of convenience. Losing coins isn't a major loss either as the coin tally only has minimal relation to Wario's alive state, when the post-fold timer runs out.

CONCLUSION

Rewards and punishments are devices which the game designer can use to manipulate the player. Rewards control the player through guilt, completist tendencies, and positive reinforcement. Punishments control the player through hard and soft threats. These devices allow the game designer to facilitate education and mastery of the game's mechanics.

NARRATIVE

PREMISE AND INTERACTION SET IN CONTEXT

GAME IDEAS

PREMISE AND INTERACTION SET IN CONTEXT

There's a lot of confusion around video games and storytelling which I've never understood. If we accept that interactivity is the medium's defining characteristic, then we must also accept that interactivity is at the heart of video game storytelling. Discussion of video game narrative ought then to be about interaction above all else.

Interactivity in itself though doesn't communicate meaning; it needs context. Imagine two first-person shooters with identical controls and mechanics. One has the player, a one-man army, storm his way through a Nazi prison base shooting mutants in the face. The other has the player, a school kid, run around a zoo throwing animal feed at goats. The interactions are the same, but their meanings are totally different because of the contexts they're set in. Interaction set in context is therefore to video games what a word is to literature, the smallest unit of meaning.

The other key part of video game narrative, the premise, establishes the game world, its characters, and the personality and role of the avatar. By defining the avatar, the premise gives the player the information they need to inhabit the playable character and make interactions under their persona. Since the player/avatar interacts with the game world, the premise gives all individual interactions a collective purpose.

To understand *Wario Land 4*'s narrative, we need to look at its premise and interactions.

an interaction set in context is a word,



an arrangement of interactions is a sentence,



a group of like arrangements is a paragraph,



a level is a page,



a world is a chapter,



and a game is a story.



PREMISE

The premise is most commonly conveyed through a cutscene at the start of the game. Because cutscenes are non-interactive, they're an infallible way to set the tone and give the player the information they need. The manual, box art, and print on the disc or cartridge are also part of the premise. Cutscenes throughout a game update the premise and establish any changes in the avatar and game world.

Wario Land 4 builds its premise through a skippable cutscene (before the title screen), a non-skippable cutscene (after the title screen), its box art, and instruction booklet. You can find all of these items in the reference¹. From each item the player learns:

Skippable Cutscene

- » Wario drives a hot rod modified to his likeness (narcissism).
- » Wario drives at high speeds and has a disregard for cats.
- » A pyramid with "*legendary treasure*" has been discovered deep in the jungle.
- » It appears that Wario, leaving the city and driving off into the desert, is in pursuit of the treasure.

Non-Skippable Cutscene

- » Wario reaches the pyramid and is thrilled to be there.
- » The pyramid is made of gold.
- » The cat Wario almost ran over in the first cutscene leads him into the pyramid.
- » Wario falls into the pyramid looking like a buffoon.

Box Art

- » Fills in the missing piece between the two cutscenes with Wario trawling through the jungle.
- » A Keyzer, Tobawani, red Spearman, and Mr. Game and Watch from the item shop are characters from the game.

Instruction Booklet

- » Wario read the newspaper in the first cutscene and had the sole intention of taking the treasure.

¹ Skippable and Non-Skippable Cutscenes: <http://youtu.be/uffPNJnGjBg>
PAL Boxart: <http://danielprimed.com/wp-content/uploads/2012/12/WL4-Box-PAL.jpg>
Instruction Booklet: <http://replacementdocs.com/download.php?view.4169>

- » Wario picks his nose (self-deprecation).
- » Princess Shokora had once ruled the area around the pyramid, but has been cursed to sleep by the Golden Diva.
- » The Golden Diva is “arrogant, selfish [and] money-crazed”.
- » Wario is angry, insulting, and demeaning to the reader (the manual is written by Wario).
- » Spearmen, Goggley-Blades, Beezley, Hoggus, and Keyzer are introduced.
- » Wario's daily timetable (a cockroach crawls up his nose while he's sleeping, his toilet is clogged, he eats a lot, his car runs out of petrol in the middle of the desert, he exercises at night, etc) defines his personality.

The premise outlines Wario's general character as a treasure-hunting cartoon thug, leaving his abilities, animation, and sound effects to portray his strength; the spoils to underscore his greed; the enemies to establish his anger; and the transformations to define his self-deprecating nature. The Golden Pyramid is just a hub connecting the disparate worlds, the only context it needs is the appearance of holding treasure, which it achieves in the second cutscene.

Wario Land 4 is light on premise, and even then most of it's optional.

By skipping the first cutscene, the player misses the sequence with the newspaper which implicitly reveals Wario's motive for going to the Golden Pyramid. Thus, the player can begin the game without any purpose behind their actions. For those familiar with Wario's character, this isn't a big deal as they know that he's probably off chasing treasure again. First-time players though, may feel left out the loop.

Princess Shokora and the Golden Diva are only properly introduced in the instruction booklet and after Wario defeats the diva. One might say that this is a detriment to the narrative as, without reading the manual, the player only becomes aware of their story thread at the end of the game, which makes their role in the narrative somewhat dubious. On the contrary, the Princess Shokora/ Golden Diva arc is tangential to Wario's reason for being in the pyramid, so there's little point in introducing the characters at the start of the game. When the player reaches the Golden Diva, they're going to perceive her as the last obstacle standing in front of the treasure, much like we assume Wario would, as opposed to a money-hungry witch who put Princess Shokora in an endless slumber. By the same account, the player is likely to be dumbfounded, as we see of Wario, by Princess Shokora transforming into her human self at the end of the game. By hiding some of the premise in the instruction manual, the booklet plays the same role as the newspaper in the game. Wario doesn't

bother reading much of the newspaper just as the player doesn't bother reading much of the manual. This makes their reactions to the narrative so similar and creates a stronger relationship between player and avatar.

The cutscene at the end of the game closes the journey with the premise coming full circle². Wario claims the treasure and returns home, the Golden Diva is defeated, and Princess Shokora returns to normal. The epilogue riffs on the introduction with Wario almost running over a white cat on his way to an all-you-can-eat steakhouse.

The cutscenes between levels and bosses create continuity between levels, the pyramid, and the Golden Passage.

STORYTELLING THROUGH INTERACTION

In video games, storytelling primarily consists of interaction set in context. For a story to be told, there needs to be three things: the player/Wario, a game element, and a reason to interact. The latter most being what brings the player/Wario and the game element together. For example, the blocking of Wario's path by an enemy.

The narrative is our inference of the interaction. Every player has their own set of associations tied to certain interactions, based on their life experiences. Thus, two people can play the same game and have two completely different interpretations of the story. There are three areas in which we interpret interaction: the context, the function, and the game feel. The context is the characters engaged in the interaction, their purpose for engaging, where, when, etc. The function is what one game element does to the other. The game feel is the input of the action. Interactions that happen to Wario have no game feel.

Below are three examples of interactions and the narrative I infer from them, based on the three areas of interpretation.

2 Ending: <http://youtu.be/ICNH7iB1NKI>

WARIO ACCIDENTALLY BUMPS A MARUMEN

The Context of the Action: Wario is a weighty cartoon thug and the Marumen is a defenceless ball on legs. With the Marumen following its fixed movement pattern and the player overlooking the enemy in Wario's path, the two bump into one another.

The Function: Wario bounces back with a little hop while the Marumen skids along the ground.

Game Feel: The player holds down either the left or right arm of the d-pad as Wario comes into contact with the Marumen. Wario's WALK animation is interrupted and control is taken away from the player, although they may still be holding down on the d-pad.

Narrative

There are four ideas I infer from the interaction: an assertion of Wario's dominance over the Marumen, because of his aggressive demeanour in respects to the harmless enemy; a reference to Wario's mass and the inconsequentialness of small enemies, because of the Marumen's long skid compared with Wario's meagre bounce; a reminder of the player's duty of care, because of the surprise break in input-output, and an accidental inconvenience between two bodies.

WARIO IS HIT BY A GOGGLEY-BLADE UNDERWATER

The Context of the Action: Wario is a weighty cartoon thug and the Goggley-Blade is the security guard of the waters, patrolling the currents for any threats. Wario is trying to pass through the water and the Goggley-Blade is trying to deter any passers. Wario then swims within the enemy's sight

The Function: The Goggley-Blade rushes towards Wario, who attempts to avoid, but gets hit by the fish's spike.

Game Feel: No matter how they try to dodge, the player flinches. This means fast finger movement and hard presses of the plastic.

Narrative

There are three ideas I infer from the interaction: Wario failed and lost face, because he was caught out by an enemy that's presented as just doing its job; the Goggley-Blade is a powerful threat, because of the speed of its attack; and the difficulty of swimming is made apparent, because of the failed flinch and Wario's slower movement speed.

WARIO DEFEATING AN IWAO

This final example is of a string of interplay as opposed to a single interaction.

The Context of the Action: Wario is a weighty cartoon thug and the Iwao is an angry cave man-like enemy. Wario wishes to pass, but the Iwao doesn't want to let him. The two are equally aggressive.

The Function: The longest string on the interplay diagram³.

Game Feel: The player holds the d-pad to move Wario towards the Iwao and slides their finger to the downward arm so Wario dodges the boulder throw with a CROUCH. They then press and hold A to JUMP while re-pressing the d-pad to push Wario above the Iwao. Once Wario's in position, the player releases A and holds the down arm of the d-pad to SMASH ATTACK.

Narrative

There are two ideas I attribute to this sequence of interplay. Firstly, it's a sparing match between two equals, because both combatants are aggressive and have exaggerated animations, and the back and forth of interplay is akin to sparing. Secondly, I feel a great sense of victory in beating the Iwao, because of the deep interplay and the challenge of successfully pulling off all the moves.

CONCLUSION

Narrative in a video game consists of a premise and interactions set in context. *Wario Land 4* is light on premise, allowing the player to familiarise themselves with Wario and the game world through play. Each interaction set in context has three parts which the player can infer meaning from: the context, function, and game feel. When like interactions are grouped together, they form narrative units called game ideas, which we'll explore in the subsequent section.

3 Iwao Interplay Diagram: <http://danielprimed.com/wp-content/uploads/2012/12/Iwao-Interplay.jpg>

GAME IDEAS

Touch Fuzzy, Get Dizzy from *Yoshi's Island*. Time reversal from *Braid*. The mine carts from *Donkey Kong Country*. The gravity gun from *Half-life 2*, or any dungeon from any *Zelda*. When we think back to games we played in the past, we remember their game ideas. In [Premise and Interaction Set in Context](#), I said “Interaction set in context is to video games what a word is to literature, the smallest unit of meaning”. When a group of similar interactions set in context are fleshed out over two or more arrangements through variation, they form a cohesive narrative unit, a game idea.

This might be a bit difficult to wrap your head around, so let's explore one of the examples above in more detail. Throughout *Half-life 2*, the player uses the gravity gun to pick up and hurl various game elements. Each arrangement, whether it be a physics puzzle or an encounter with enemies, elicits certain interactions using the gravity gun. Through the different applications (variation), a narrative forms around the player's use of the gravity gun.

Below is a list of *Wario Land 4*'s game ideas. In the Level Analysis, I explore—in great detail—the way the game ideas evolve through each of the arrangements.

Entry Passage

- » Hall of Hieroglyphs—Tutorial

Emerald Passage

- » Palm Tree Paradise—Continued tutorial, ATTACK/DASH ATTACK dichotomy
- » Wildflower Field—Vertical movement
- » Mystic Lake—Underwater adventuring
- » Monsoon Jungle—Swinging from tree to tree

Ruby Passage

- » The Curious Factory—Mechanisation and Taylorism
- » The Toxic Landfill—Garbage archaeology
- » 40 Below Fridge – Snow and ice
- » Pinball Zone—Pinball machine, loading pinballs into catchers

Topaz Passage

- » Toyblock Tower–Sequence puzzles
- » The Big Board – Board game
- » Doodle Woods–Arts and crafts
- » Domino Row–Race against falling dominos

Sapphire Passage

- » Crescent Moon Village–Being pursued by a ghost
- » Arabian Nights–Riding a magic carpet
- » Firey Cavern–Fire and ice
- » Hotel Horror–Hotel building structure

Golden Passage

- » Golden Passage–Final exam

CONSIDERATIONS

NB: Many of the comments here lack examples as all the evidence can be found in the Level Analysis section. These observations are based on that analysis. So just trust me on this one.

The composition and nature of game ideas can vary greatly per game. In *Portal*, there is only one game idea, the portal gun, which is explored thoroughly throughout the course of the game. (One could say, however, that there are several smaller game ideas within the portal gun concept). By contrast, *Wario Land 4* is made up of many disparate game ideas, as listed above.

Within each level, there are dominant and minor game ideas. The latter consisting of fewer interactions than the former. *Wario Land 4*, as with most games, focuses on one dominant game idea per level.

The potential for game ideas is dependent on the breadth of mechanical functions and game elements, and the level of ingenuity at which they're combined.

Because they're systemically isolated, have strong contexts, and depend on certain game elements to function, transformations make up many of *Wario Land 4*'s game ideas.

Game ideas aren't just restricted to a single level. For example, the halloween game idea, consisting of Vampire Bat and Zombie Wario, is introduced in Crescent Moon Village, fleshed out in Arabian Nights and reappears in a reduced form in Hotel Horror.

The richness of a game idea depends on the variety of interactions. If the core interaction is CLIMBING ladders, then CLIMBING five ladders is a boring piece of interactive narrative. The same meaning is repeated five times. However, with variation, the game idea develops and becomes more compelling. Take the following series of arrangements as an example:

1. CLIMB a ladder
2. CLIMB a ladder and then JUMP off the ladder, onto the subsequent platform
3. CLIMB a ladder, JUMP off the ladder, and CLIMB onto a second ladder without touching the ground
4. CLIMB, JUMP off, and CLIMB onto a series of ladders of varying heights
5. CLIMB, JUMP off, and CLIMB onto a series of moving ladders (first vertically, second horizontally, third both)
6. CLIMB, JUMP off, and CLIMB onto a series of moving ladders of varying heights

Now, let's say I establish a second ladder-orientated game idea involving SLIDING and it looks something like this:

1. SLIDE down a ladder
2. Reach a ladder and SLIDE down before the ceiling closes on Wario
3. Reach a ladder, SLIDE down, reach another ladder, and SLIDE down before the ceiling closes on Wario

Combining the two concepts would not only create a larger, more interconnected narrative unit, but enrich both game ideas. Here's my attempt at a combination:

1. CLIMB up a ladder, retrieve a jewel piece, SLIDE down a second ladder, Wario drops from the ladder onto a switch which activates a falling ceiling
2. SLIDE down a ladder onto a platform, JUMP and CLIMB onto a second ladder
3. SLIDE down a ladder, stop before the end, JUMP and CLIMB onto a second ladder
4. SLIDE down a ladder, stop before the end, JUMP and CLIMB onto a second ladder, SLIDE down that, stop before the end, JUMP and CLIMB onto a third ladder
5. Same process, but ladders are of varying heights
6. Same process as #4, but ladders move (first vertically, second horizontally, third both)

7. Combine steps #5 and #6
8. Alas, my theoretical example wouldn't work that well as Wario's JUMP off ladders is more of a fall and it's not so easy to control his SLIDE, but you get the picture.

There are a few instances where *Wario Land 4* combines game ideas. For example, Room 1 of Wildflower Fields introduces Beezleys and Puffy Wario. In Room 2, Wario must transform into Puffy Wario to reach a high platform and then HEIGHTENED SMASH ATTACK off it to break a thick block below. The Puffy Wario and SMASH-ATTACKING-down-vertical-drops game ideas are brought together to create a richer narrative about vertical movement.

Game ideas are often developed through the addition of familiar game elements. For example, in *Arabian Nights*, the magic carpet concept is well established by the level's fold. Post-fold, water is introduced as a new threat which doesn't try to knock Wario off the rug like the Mayu Birds pre-fold, but destroys the rug outright. The addition of this familiar game element not only adds another wrinkle to the game idea, as the player must work against the carpet's descent to keep a safe distance from the water, but extends the meaning of the rug and water.

In *Wario Land 4*, the player completes each room in a linear order, the arrangements have a limited number of solutions, and the lock-and-key progression enforces mastery. The strict design gives the game designer more control over the development of interactions, variation, which leads to a more coherent narrative. *Grand Theft Auto III* uses similar checks and measures to *Wario Land 4*, but each mission has multiple solutions and the player's encouraged to experiment. The looser design gives the player more control over the development of interactions, which leads to a more scattered narrative.

It's easier to map the progression of game ideas in games which are more regimented. In *Wario Land 4*, because arrangements are clusters of homogeneous interactions and each room usually just has one arrangement, we can chart the evolution of a game idea through the rooms.

Game ideas shouldn't be confused with what could be considered a game's character or texture. This being, for example, *Wario Land 4*'s folded and restricted-to-freer practice level design. These things are repeated throughout the game and shape the formation of game ideas, but aren't narrative.

CONCLUSION

Interaction set in context is the smallest unit of meaning in a video game. Several similar interactions set in context and established through variation, over multiple arrangements, form a coherent narrative unit, a game idea. They are the paragraphs, the bits we tend to remember when looking back at our favourite games. After we analyse the levels, we can bring the narrative discussion full circle and talk about how the game ideas come together to create themes.

VISUAL/AUDIO

CONVEYING INFORMATION THROUGH FORM

THE 2D PERSPECTIVE AND THE ILLUSION OF DEPTH

BOUNDING BOXES, CAMERA, ACTION!

MUSIC OBSERVATIONS

CONVEYING INFORMATION THROUGH FORM

In his 2011 GDC lecture¹, Satoru Iwata, Nintendo's global president, discussed his experiences over the past 25 years of game development. In concluding the address, he offered the audience three pieces of advice, the first of which was:

"[a game's] central appeal must be evident almost immediately. If you hope a game player will stay engaged for more than 10 minutes in order to understand what you offer, it may be too late".

A game's "central appeal" is buried beneath the knowledge of its rules, mechanics, and game elements. The quicker the game imparts this information, the sooner the player can unearth the "central appeal". Take too long, however, and, as Iwata says, "it may be too late". It is therefore the responsibility of game designers to convey a lot of information very quickly. *Wario Land 4* employs a wide range of visual design principles to do just that. Let's look at a few of them.

1 Satoru Iwata 2011 GDC Keynote—Part 1 <http://youtu.be/EcAHJHnvd9A>

FORM FITS FUNCTION

The visual form of an object represents its function. This way, the player knows—or at least has some idea of—how to interact with a game element before they've done so. This is the governing principle behind *Wario Land 4*'s visual design. Here are some examples:



- » Wario is strong and bulky. The attack mechanics are all core mechanics, with ATTACK being his most functional move. Staying true to his size, Wario can't run.
- » Puffy Wario, with his large head and small body, looks and controls like a hot air balloon. The player must constantly micromanage his float and tendency to veer.
- » Vampire Bat Wario constantly drops to the ground. The player needs to rapidly press a button just to keep him afloat. His appearance suggests that his large head weighs him down.
- » Thick blocks are darker than regular blocks. The colour indicates thickness.
- » Marumen, rounded in body and lacking arms, appear as they function, like pawns.
- » The lights on a Hammerhead indicate where the Spiky Balls come out from.
- » Each class of reward is visually distinct. Whether it be a large, blue diamond or a small, bronze coin, the form fits the value. Furthermore, after Wario collects a reward, its coin unit value appears on-screen. The size of the text depends on the size of the number. So, the better the reward, the larger the text.

FORM ACCENTUATES FUNCTION

Form is sometimes exaggerated to elicit a particular response from the player or draw their attention to details they may otherwise overlook. Here are some examples:



- » When attacked, most enemies fly off-screen with a stupefied, Kunio-Kun-esque expression on their face. The overemphasis adds a comedic flavour to the interaction while accentuating Wario's strength.
- » The trails, flashing of colour, kicking up of dirt, and zaps of lightning that come from Wario's body when attacking further emphasise his strength.
- » Quaking the ground sees the screen shake which draws the player's attention to its effect on off-screen game elements.
- » Breaking a block sends loose rubble into the air. Charging through a line of them busies the screen with a flurry of block chips. Amidst the mayhem, coins fall from several of the blocks. The visual excitement creates a positive association with the action that encourages the player to break rows of blocks without the need for prompts.

FORM IS FAMILIAR

Players bring their lived experiences to the game, so game designers have a huge pool of material to draw on. Designing game elements around—or directly using—real-life objects and creatures taps into the player's pre-existing knowledge base, conveying information almost immediately. I doubt, for example, that it took you long to figure out how to use the ladders in the Hall of Hieroglyphs. Below are a handful of examples.



Fish



Bee



Caterpillar



Archer



Hedgehog



Lamp



Bat



Ghost/Key



Spring



Crocodile

Some game elements are based on real-life objects, but don't function like them. For example, PET Bottles. Nothing about their behaviour, properties, or interactions is similar to a bottle. The form is familiar principle doesn't apply.

ICONOGRAPHY

Icons are symbols which convey meaning through common association. For example, we often associate a dollar sign with money and a heart with health. *Wario Land 4* uses both of these examples, here are some more:



- » A stopwatch next to the post-fold and boss battle timers symbolises limited time.
- » The Mr. Game and Watch diagrams on the walls of the Hall of Hieroglyphs teach the player how to perform each mechanic.
- » The icons on Big Board's board represent the possible outcomes from the dice rolls.
- » The coloured mats in the Golden Pyramid's main hall represent the themes of each passage. From the entrance passage going anti-clockwise: Spoiled Rotten, nature, technology, toys, and horror.
- » The gold, silver, and bronze crowns on the passage screen indicate the player's high score.

- » On the passage screen, each level is represented by a large icon. The picture not only acts as a visual marker to help the player find a previously-completed level (nobody remembers the names), but it also sets the context of what's to come for first-time players.

COLOUR PSYCHOLOGY

Each colour has its own psychology. Blue, for example, is known to create calm, where red generates anger. You often see film directors and interior designers use such associations to elicit certain emotions and ideas. In movies, digital colour correction has bred a tendency for horror movies to be coloured blue, sci-fi movies green, and post-apocalyptic movies grey². As for interior design, hospitals and bathrooms are painted white, expressing neutrality and cleanliness. Coffee shops are various shades of brown, representing the earth, nature, and wisdom. Colour psychology isn't a big part of *Wario Land 4*, but there are a few examples:

- » The strongest Spearman is red, fitting its aggressive behaviour.
- » Harimen are pink and Harimenzetto are grey. Their colour corresponds to how easy it is to flip them over. Pink is closely linked with movement, whereas grey is the colour of statues.
- » The post-fold and boss battle timers transition from white to yellow (30 seconds) to red (10 seconds). Each colour suggests a higher sense of urgency.
- » In Hotel Horror³, the lower floors are blue and the upper floors are red. The closer Wario gets to the frog switch, the greater tension given off by the hotel's colour scheme. This is also the case with Pinball Zone, albeit reversed.

COLOUR CODING

As with icons, colours can be used as visual markers to quickly convey meaning. Being an “*element of style*” as opposed to a graphic gives the designers flexibility in how they apply colour. Here are some examples:

- » Each passage is assigned a gem stone. The walls of the passages are painted with the colour of their respective gems so that the player can easily identify where they are in the pyramid.
- » Similarly, in Pinball Zone, each backboard room is distinguished by colour.

2 More examples of digital colour correction here: http://www.cracked.com/article_18664_5-annoying-trends-that-make-every-movie-look-same.html

3 Hotel Horror Map: <http://danielpriemed.com/wp-content/uploads/2011/05/hotel-horror.png>

- » As the player reduces a boss's life bar, it transitions from green to yellow to purple. A strange combination, but it still indicates that certain amounts of health have been lost.

FOREGROUND AND BACKGROUND



So far we've covered principles of visual design which teach the player how to interact with the game world. Before they consider *how* to interact though, the player must be able to determine whether or not they *can* interact. That is, does a game element belong to the active foreground or the static background? Here are some of the visual techniques which help the player make this distinction:

- » Foregrounded objects have a black pixel outline which make them appear in focus.
- » Grass and rocky surfaces outline the terrain and give it a rugged feel.
- » The terrain is always darker and of a different colour to the background.
- » Parallax scrolling ensures that the background moves along with Wario, where the terrain doesn't.
- » There are occasionally several layers to the background that move independently of each other.
- » The terrain has a tiled patterned.
- » Shadows fall off the terrain.
- » There are rarely ever any objects in the background, just walls and backdrops.

THE 2D PERSPECTIVE AND THE ILLUSION OF DEPTH

One of *Wario Land 4*'s neat graphical flourishes is parallax scrolling. That is, layers of graphics which scroll independently from each other. The video reference explains how the technical trickery works¹.

The different speeds of each layer create the perception of depth. The slower-moving objects are far away while the faster-moving objects are closer to the foreground. *Wario Land 4* isn't 3D though. Three or four layers of 2D sprites don't equate to the infinite range of points on a third axis. Furthermore, there's no way for the player to engage with this depth. It's just a neat visual trick. What we can say is this: *Wario Land 4* is a 2D game with artificial layers of depth set in the side-scrolling perspective.

It's the side-scrolling perspective that ultimately defines *Wario Land 4*'s gameplay. The point of view presents gravity in a simplified manner and allows us to rationalise abnormalities, such as:

SUSPENSION IN MID-AIR

What is it that keeps all those platforms suspended in mid-air? Well, we don't really know. It must be something behind the platforms, obscured from our view. Since we can't see what's behind them, we accept that platforms, blocks, crystals, and other game elements can sit suspended in mid-air without any visible supports.

ENEMIES WALKING BEHIND EACH OTHER

If an enemy walks into the path of another enemy, one of them falls back a layer and carries on behind the other. Even though they're side by side, Wario can still defeat the pair with a single SMASH ATTACK². Wario's quite a bulky character, so it's not that much of a stretch to believe that he's as wide as two enemies. The logic falls apart though when he can destroy four or five enemies layered behind one another.

1 Parallax Scrolling: <http://youtu.be/MHhfqFDxbqM>

2 I've done this several times before, but on more recent attempts haven't been successful.

Wario Land 4 has several logical inconsistencies which the limitations of the side-scrolling perspective make easy to overlook. Because of the way the perspective rationalises abnormalities, we rarely question the obscurities of 2D platformers.

BOUNDING BOXES, CAMERA, ACTION!

When players talk about camera control, most, if not all, of the discussion is usually centred on 3D games. Considering the difficulty of designing a good 3D camera, this is to be expected. Let's not forget 2D games though. A bad camera in a 2D side-scroller can ruin an otherwise well-designed game.

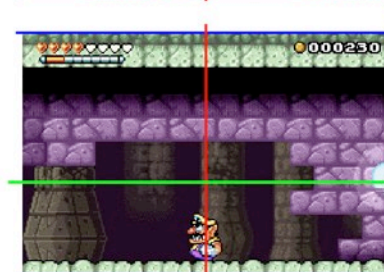
Wario Land 4's camera obeys the following set of behaviours:

- » The camera follows Wario, keeping him in the middle of the horizontal axis and slightly lower than the middle of the vertical axis. This is the “rough centre”.
- » Wario can't move faster than the camera or, at least, the drag of the camera keeping pace with him is so minimal that it's barely noticeable.
- » The camera holds Wario in the rough centre until the screen view hits the borders of the room (the bounding box), at which point the camera remains stationary on the axis/axes of the border. Please see the image for a visual explanation.
- » When the camera rests on a bounding box, Wario mobilises it by meeting with one of the midpoints. For example, when Wario enters a room, he walks out from the entranceway and hits the horizontal midpoint, prompting the camera to follow. In these instances, it's as though the camera is in waiting.



These two lines make up the rough centre. When the camera isn't controlled by a bounding box, as in this example, Wario's always framed in this position.

Vertical Midpoint



Bounding Box

In this situation, the camera is held in place by the room's bounding box and cannot move downwards to align Wario with the vertical midpoint. Many rooms take advantage of these types of screen-tall or screen-wide bounding boxes so as to keep the camera moving along a single axis and reduce needless scrolling/complexity.



Here, since there is no ceiling and Puffy Wario will soon move past the vertical midpoint, the camera will rise and continue to track him, keeping him in the rough centre.

If this were a screen-tall bounding box, Wario would float above the vertical threshold and the camera would remain stationary, locked into place.

To make the camera operations a bit easier to understand, I've prepared a running commentary of the camera work in Doodle Wood's pre-fold. The video and a map of the level can be found in the reference¹. Don't forget that the edges of the stage are the bounding box which the camera has to work within.

00:09: Wario enters the level above the vertical threshold, conveniently represented by the flat ground where he lands. The camera is locked into place by the ceiling and left-hand wall.

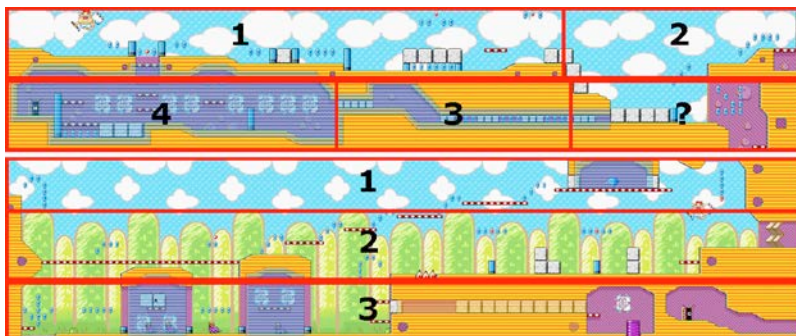
00:10: As Wario goes down the first step, he crosses the vertical threshold. The camera follows, holding him at the vertical midpoint until he reaches the last few steps where the screen view hits the lower bounding box.

¹ Doodle Woods Video—http://youtu.be/8kergln_d1l

Doodle Woods Map—<http://danielprimed.com/wp-content/uploads/2011/05/doodle-woods.png>

As Wario passes the second step, he hits the horizontal midpoint and the camera begins tracking him on this axis.

00:11-0:15: When Wario full JUMPS, he hits the vertical midpoint and the camera follows, ascending off the lower bounding box until it hits the ceiling. The camera stops moving horizontally at about 00:12, as it touches the right-hand edge. On Wario returning to the ground, the camera goes back to resting against the lower frame.



These bounding box examples aren't 100% exact, but approximations. It's hard to get a perfectly clear picture without delving into the game's source code.

00:15-00:30: This bounding box is a screen tall, so the camera's locked vertically. Starting from 00:16, Wario's only tracked horizontally. The quake causes the camera to shake.

00:30-00:32: Once Wario moves past the first grey block before the staircase, the camera lowers to position him in the top-left quadrant of the screen. Wario enters a second bounding box, which isn't tied to the edges of the room.

0:32-0:40: Wario passes through the lower bounding box (or bounding boxes, it's really hard to tell). The camera hits the lower frame just as Wario leaves the room at 0:40.

00:40-00:43: Wario SMASH ATTACKS through one screen-tall bounding box into another (see prior image). We know that the initial box exists, as the camera doesn't scroll to the ground, but transitions between viewpoints.

00:43-00:53: Identical to 00:15-00:30.

00:53: Once again, Wario enters a new bounding box and the camera recalibrates.

00:53-01:03: Identical to 00:15-00:30.

01:03-01:24: The bounding box covers the entire puzzle room, so the camera just moves freely for the most part.

01:24-01:51: Identical to 00:15-00:30. The jewel piece room is a screen in size.

01:51-01:53: The drop is identical to 00:40-00:43.

01:53-01:54: Wario enters another bounding box, as marked by the transition.

01:55-02:24: Identical to 00:15-00:30

02:24-03:01: The camera work here is quite intricate. Please refer to the puzzle room analysis for a complete rundown.

03:01-03:30: Identical to 00:15-00:30. The diamond room is a screen in size.

Now that we know how the camera operates, we can examine why it functions the way it does.

Given that Wario moves as much to the left as he does to the right, thanks to the folded level design, the camera needs to provide equal and adequate visual leeway for either side of the screen. The only way to achieve this is to position Wario in the horizontal centre.

Wario moves upwards just as much as he does downwards, doesn't he? After all, every jump must have a fall. So why isn't Wario framed in the vertical centre? Side-scrolling platformers are all about getting the player to engage with gravity. Jump is therefore imperative to the genre. The camera positions Wario below the vertical centre so as to display more of where he can jump to and thereby encourage greater participation with the core dynamic.

Since gravity concentrates most of the play area on the ground, framing Wario in the vertical centre would only do a great job of showcasing the floor.

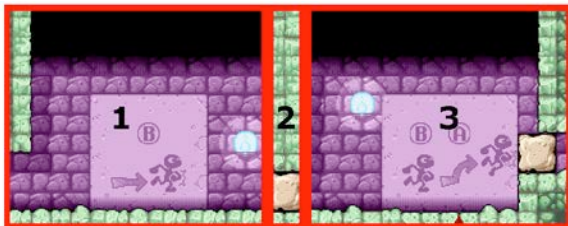
Wario doesn't move as much upwards as he does downwards either, so the camera needn't provide a lot of leeway for descent. Many of Wario's jumps are to raised platforms which undercut his fall. Ascent therefore almost always outweighs descent.

Because there's a lack of visual leeway beneath Wario, the levels tend to avoid drops. When Wario does fall some distance though, there are usually devices in place to act as guides, compensating for the camera. For example, the added bounding boxes in Rooms 3 and 4 of Doodle Woods, the columns of crystals in Room 1 of The Toxic Landfill, and the narrow gaps in Room 6 of The Curious Factory. The lack of vertical leeway makes moving downwards feel treacherous.

The camera moves as fast as Wario so that it doesn't drag and obscure leeway.

The reason why the camera stops moving when it meets with a bounding box is because if it didn't, it would continue to scroll, filling the screen with blank space or terrain tiles.

You'll note from the commentary that the bounding boxes artificially control the camera. In the three rectangular rooms, they prevent the screen from scrolling vertically, where such movement would only be a distraction.



By manipulating the camera through the bounding boxes, the designers can focus the player's attention in subtle ways. For example, in Room 5 of the Hall of Hieroglyphs, there are three bounding boxes. One for either half of the room and one spanning the 2-unit width of the divider. The latter bounding box leads the camera into the right-hand area, just before Wario enters, to create a smooth transition between the two halves while retaining the sectioned-off feel of each area. The result is a surprise reveal that evokes modest delight.

Another example. In Doodle Woods, the screen-tall bounding boxes segment falls, so the camera doesn't need to scroll. By holding the viewpoint, the player is relieved of the uncertainty of not seeing far below Wario as the camera tracks vertically.

Aside from how the bounding boxes manipulate the camera, the other main takeaway from the Doodle Woods example is that it's the bounding boxes that define the rooms, not the walls, ceilings, and entranceways.

MUSIC OBSERVATIONS

Music is the most underrated aspect of video games. This is, in part, because of writers like myself who lack the technical know-how to competently critique video game music. Of all the essays in this book, this is the only one dedicated to music, and that's a shame. Without music, Wario wouldn't be so expressive, the levels would lack atmosphere, and the player would lose one of their senses needed to interpret the game world, hearing. There are three types of music in *Wario Land 4*: background music, sound effects, and voice samples. The observations below give insight into these three categories.

BACKGROUND MUSIC

- » Each level has its own background music which helps characterise the environment.
- » The background music pre-fold usually runs at a slow to medium tempo to express neutrality. The purple pipe puzzle room theme is more like elevator music, implying a lack of time constraints. The post-fold music is upbeat and chaotic, prompting haste.
- » The music in the opening cutscene continues into the title screen, which carries into the new game cutscene before morphing out as Wario enters the Golden Pyramid. The music supports the narrative continuity.
- » When Wario transforms, the background music speeds up for fast-moving transformations or slows down for slow-moving transformations.
 - » Speeds up: Puffy Wario, Vampire Bat Wario, Bouncy Wario, Flaming Wario, and Frozen Wario
 - » Slows down: Fat Wario, Flat Wario, Zombie Wario, Bubble Wario, and Snowman Wario
- » Similarly, ROLLING increases the tempo of the background music while CROUCHING decreases the tempo.
- » After the post-fold timer expires, the background music goes dead.
- » Music tracks fade into each other.
- » Pausing stops all music.
- » When Wario's idle, the background music fades out and the sound of him exercising fades in. However, if he only has one heart left, the beeping sound effect plays ominously over everything else.

SOUND EFFECTS

Sound effects are aural feedback which help the player interpret the game world.

- » Reverberation is used to simulate the sound of being underwater while echo is employed in enclosed areas. These effects help create a sense of place.
- » The thicker the block, the crunchier the sound of breaking it.
- » The DASH ATTACK'S block-breaking sound effect is crunchier than ATTACK'S. The feedback helps the player differentiate between the two mechanics.
- » The sound of soft skidding is quieter than regular skidding.
- » The high pitch sound of changing direction mid-WALK compensates for the animation which is more abrupt. This is one of the most important sound effects in the game.
- » DASH ATTACK sounds like an oscillating wave, which is appropriate given that the wave can only be heard in full when Wario DASH ATTACKS for some distance, the way the mechanic is designed to be used.
- » The JUMP sound effect is "*stretched*" the higher the JUMP.
- » The "tee" sound of Wario touching the ground aurally confirms a successful landing. This way, the player doesn't need to rely on a visual confirmation and can instead concentrate on the next jump.
- » The WALK sound effect is in sync with the movement of Wario's hands to enhance the plodding feel of the mechanic.
- » LOOK UP has no sound effect.
- » The SMASH ATTACK sound reverberates the longer Wario falls.
- » When Wario collects several crystals at once, the sound effects morph together.
- » Rewards with a higher coin unit value have a more exciting sound effect than rewards with a lower coin value unit. The sound effects obey form fits function.
- » The sound effect for climbing corresponds to the animation of Wario's feet.
- » When Yurei grabs the Keyzer, the key ghost lets out a sharp whistle. The high pitch is necessary to grab the player's attention.
- » When a Beezley's stinger gets caught in a flower bud, the sound effect is overstated to draw the player's attention to the counterpoint.

WARIO'S VOICE SAMPLES

Wario's voice samples give him extra character, particularly in regards to self-deprecation. The anti-hero has three sets of samples: good, bad, and neutral. He randomly says a line from one of the sets depending on the context.

Good—Collecting a reward or landing a HEIGHTENED SMASH ATTACK

Neutral—Breaking out of an idle animation

Bad – Losing health and entering and exiting the vortex and transformation state.

DESIGN PHILOSOPHIES

GAME AS TEACHER

THE GAME DESIGN STYLE GUIDE

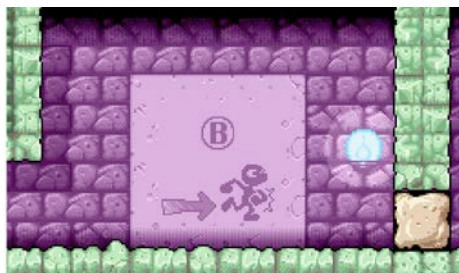
GAME AS TEACHER

Contrary to long-held belief, video games are far from mindless distractions. They are in fact the world's best educators. Consider the following points:

- » If players can't easily learn and eventually master a game, then they probably won't have fun playing it, the game won't sell, and the studio will go bust. So it's in the best interest of the games industry that video games are good teachers.
- » Games are just assessment. In *Wario Land 4*, if you can't break that first block in the Hall of Hieroglyphs, then you can't reach the next room. The only way you're going to remove that block and eventually go on to beat the Golden Diva is if you demonstrate your understanding of the game.
- » Video games are sophisticated systems of rules, not unlike the rules of economics, science, maths, music, or dance. As this book proves, even a simple 2D platformer like *Wario Land 4* is incredibly complicated. How is playing *Sim City*, *Age of Empires*, or *Pokemon* all that different from doing urban planning, history, or biology?
- » While Western schools are falling behind due to an increasing emphasis on standardised testing and skill and drill, millions, maybe even billions, of young people pour loads of their free time into learning these complicated systems for leisure.

Wario Land 4 is, like most Nintendo games, a fantastic teacher. Below I've documented some of the teaching practices employed in the game.

THE LOCK AND KEY METHOD



Most arrangements employ the lock and key method, where the player cannot advance until they've completed the required task. This process

prevents them from wandering into the deep end without being able to swim. Blocks, height, and distance are common locks. Projectiles, switch blocks, and Wario himself are common keys. Room 5 of the Hall of Hieroglyphs is a basic example of lock and key. By putting a block in front of the entranceway, the player can only progress if they demonstrate that they can use the ATTACK mechanic to break the block.

RESTRICTED-TO-FREER PRACTICE

Education in *Wario Land 4* follows a model of restricted-to-freer practice. In restricted practice, the player's freedom is limited so that the game can teach without the interference of player agency. This equates to smaller rooms (restricts movement) with hard punishments (forces the player to comply), no secrets (no distractions), and arrangements with only enough wiggle room for the player to perform the required task (narrows focus on education). The rooms slowly become larger, with more leeway for the player to freely demonstrate and personalise what they've learnt. By virtue of the rooms increasing in size, soft, convenience-based punishments and secret areas become more prevalent, and fewer enemies are needed. This last stage is called freer practice. The transition from restricted to freer practice forces the player to learn and be able to apply the content before they can go out and use it independently.

TEST TEACH TEST

TTT is a common teaching methodology. The teacher proposes a problem to the students and has them try to solve it, observing as they fail miserably. Afterwards, the teacher introduces the lesson's content before allowing the students to return to the original problem, now with the know-how to successfully solve it.

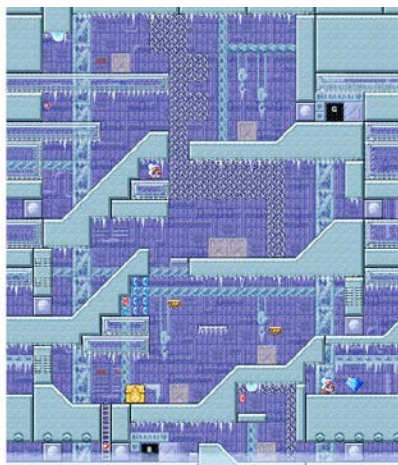


Wario Land 4 applies TTT by facilitating failure, teaching through level design, and then offering a retry. The most effective way to elicit failure is

to prey on the player's natural compulsion to interact without thinking¹. For example, in Room 2 of 40 Below Fridge, there are two slopes. On seeing the slopes, the player is likely to assume that they need to ROLL down them, so they spring to their impulses. The second slope (above) sends Wario past a clump of falling snow and into a snow block. This is the player's failed attempt at clearing the snow block. The ROLL reveals three clues: the slope, falling snow, and snow block. The player is left to make the connection. This is where the level design teaches the player the content for the lesson, how to break snow blocks. Once the player puts the pieces together (the falling snow transforms Wario into Snowman Wario who can then ROLL down the slope to break the snow block), they're then free to retry. The only difference between TTT in the game and in the classroom is that players learn through self-realisation, where students learn by the teacher's giving of information.

SCALE THE TASK

Get the player to complete a simple task and then repeat the task on a larger scale. 40 Below Fridge once again provides a suitable example.



In Room 6, the core interactions of the upper and lower halves are identical. The only difference is that horizontal space, verticality, and some enemies separate the key points of interaction in the upper half, fleshing out the arrangement. The conforming patterns in design cushion the player as they graduate up to more sophisticated challenges.

¹ We're all attracted to the touchy feely-ness of play, often putting it above rational forethought. The flash game, Execution, is a beautiful example of this. It'll take you about a minute to play. Find it at: <http://gmc.yoyogames.com/index.php?showtopic=375097>

BUILD OFF THE FAMILIAR

Start players off with what they already know so that the confidence from their pre-existing knowledge carries them through to the later arrangements where new elements are slowly added. For example, Room 4 of Palmtree Paradise uses breaking blocks, something which the player learns in the Hall of Hieroglyphs, to introduce concealment. In Room 6, the game idea returns, but breakable terrain replaces blocks.

MORE THAN ONE SOLUTION TO A PROBLEM

With several solutions to a problem, the player can complete arrangements their own way and feel greater ownership over play. The Fiery Cavern has a great example.

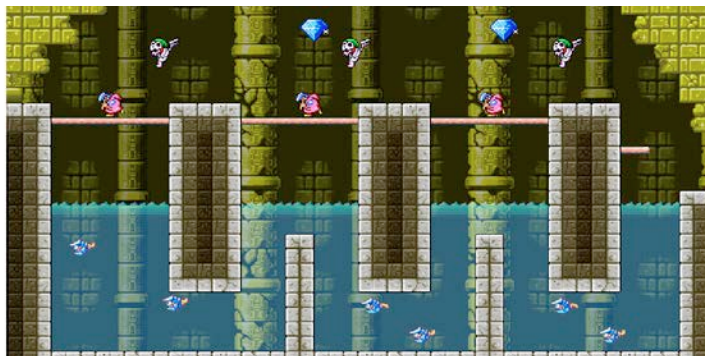


The player's goal is to reach the silver chest. The Yukiotoke's ice breath fills most of the corridor. The low ceiling binds Wario into the tight space. The player must find a way around the projectiles. There are two solutions:

1. The player can continually SMASH ATTACK the ground to stun the Yukiotoke as they inch closer, interrupting his animation until they're close enough to attack.
2. The player can CROUCH JUMP over the ice breaths. CROUCH JUMP is needed as the ceiling catches JUMPS.

IF THE PLAYER FAILS, GIVE THEM A DIFFERENT TEST

In some arrangements, if the player fails, they're given a different task instead of having to repeat the original arrangement until they get it right. For example, in Room 4 of the Golden Passage, if the player can't avoid the Skeleton Birds on the top level, they must face the Goggles-Blades below.



These situations are only present when the contents of the first arrangement have already been taught: where meeting the task isn't important as the player had already proven that they could do so previously. Because most levels push ahead with new game ideas, this example is somewhat rare.

VARIATION TO DRAW THE PLAYER'S EYE

One of the ways *Wario Land 4* catches the player's attention is by creating inconsistencies amongst repetition. The player's deductive thinking then acts as an impulse for the game to manipulate them into education.



For example, the Hall of Hieroglyphs contains four near-identical rooms, each with a jewel piece chest. The first is rather empty. The second adds two blocks and an extra Marumén. Between these two rooms, the ATTACK mechanic is introduced. When the player enters the second room, they're

likely to notice the blocks right away. Given the context from the prior room's tutorial and the realisation that the blocks are outliers, the player is more inclined to ATTACK the blocks. (Furthermore, the trio of Marumen are boxed in, due to the blocks, making them easier to attack). Doing so consolidates and personalises the education of the previous room.

INTERACTION TO DRAW THE PLAYER'S EYE

In essence, the first part of TTT. By putting something interactive in Wario's path, the player has a compulsion to play with it.



In Room 8 of the Hall of Hieroglyphs, interactivity is used to highlight space. Regular blocks are placed in front of a thick block. There isn't enough room for Wario to DASH ATTACK through all the blocks, so the player must first remove the regular blocks to make way for a run-up. By clearing the space themselves, the player becomes conscious of the distance required for the run-up.

ACCIDENTAL BACKTRACKING IS LIMITED

Backtracking is when the player returns to an area they previously visited. Often, players think of backtracking as a weakness in the level design, even though this isn't true of all cases. Take the post-fold as an example. A series of natural (approaching the level from the other end), emergent (what you did in the pre-fold affects the post-fold), and artificial factors (timer and frog blocks) reinvent the level as an optimised speed-run challenge. The folded level design takes the player's knowledge of the pre-fold and forces them to readapt it to the post-fold.

With routes folding over each other and new pathways opening up post-fold, it can be easy for the player to accidentally lose themselves down an already trodden path. Fortunately, measures like height, frog blocks, and solid platforms are rigorously enforced to close off these routes. Take a look for yourself, at every instance in every level where the player could backtrack some way, the game prevents it.

REMOVING FAILURE SO THE PLAYER MODELS THE INTERACTION



Room 2 of The Big Board has a dice switch and a platform made of block outlines leading to the subsequent room. If the player rolls a fill square, the outlines will become solid and Wario can advance. The first six squares are all fill squares, so no matter what the player rolls, they'll activate the platform. By removing potential failure, the game can have the player model, and thereby teach themselves, the necessary interactions.

Marumen are the physical embodiment of this philosophy: walking examples of the interaction structure of most enemies, void of any threat.

THERE ARE ALWAYS OPPORTUNITIES TO EXERT YOURSELF ABOVE THE MINIMUM STANDARD (SCALABLE DIFFICULTY)

Wario Land 4 is packed with opportunities for the player to further exert their skills. Each level has a music CD, two purple pipe puzzle rooms, half a dozen or so diamonds, and plenty of crystals. These rewards are sprinkled throughout levels in ways which create optional mini-challenges that layer on top of the mandatory get-from-A-to-B trial.

PLAYERS WHO DON'T DISCOVER A SECRET AREN'T EXPLICITLY TOLD WHAT THEY'VE MISSED OUT ON

Diamonds, purple pipes, and silver chests are usually hidden outside of the player's view. For example, behind breakable terrain. Visual clues tip the player off as to how to find these rewards. Because these secrets require observation, players that don't pick up on the clues won't realise what they've missed out on. This is similar to the teacher who gives hardworking students extra homework without their classmates knowing.

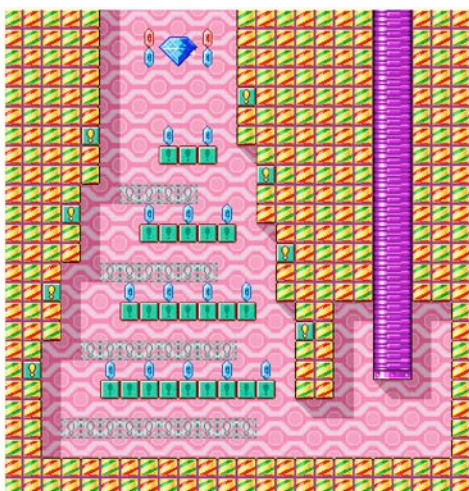
IT'S EASY TO STUMBLE UPON SECRETS

For the same reason as outlined above, the player only needs to pay a little more attention to their surroundings to find secrets. For regular players, a moment of keen observation can result in a reward, encouraging them to remain watchful. For advanced players, the secrets are motivation to be on constant alert.

SETTING THE CONTEXT

In ESL teaching, the teacher sets the context to get the students thinking about the forthcoming activity. For example, before I teach students how to order food in a restaurant, we might first discuss their favourite foods, what dishes they can cook, and where they like to eat out. Setting the context puts students in the right mindset to learn the new material.

There are many ways that *Wario Land 4* sets context. The opening cutscene establishes Wario's character, giving the player a personality to model their actions around. The Hall of Hieroglyphs introduces the game mechanics, acting as an appetiser for the gameplay to come. Each passage has its own visual theme and game ideas. The first level therefore sets the context for the later stages. In levels, the first couple of rooms are often designated to simple platforming arrangements. This way, if the player took a break between stages, they're slowly eased back into play.



Some arrangements elicit a particular interaction so as to set the context for later interactions. For example, in Domino Row's second puzzle room,

ATTACK JUMPING the first switch block plants the mechanic in the player's consciousness so that they repeat the action on each floor. With each ATTACK JUMP, the interaction's presence snowballs in the player's consideration set. This context setting, for better or worse, reduces the amount of knowledge skills needed to solve the puzzle. Once the player clicks that they need Wario to ATTACK JUMP the switch block, it takes less effort to make the same realisation shortly after.



The context setting in Pinball Zone's second puzzle room runs counter to the previous example. The unit block makes CHARGE THROW apparent, yet the regular blocks are broken by Wario falling and THROWING the prof into them. It takes more adaption and knowledge skills for the player to overcome the red herring of the context.

GAME IDEAS ARE ORGANISED BY ROOM

There's only ever one game idea per room. Levels which have more than one core game idea tend to separate them though rooms. This way, disparate arrangements are never in each other's way and the education is kept focused.

PERSONALISE THE EDUCATION

Whether it be through freer practice, scalable difficulty, or the ubiquity of blocks, the player is given ample opportunity to creatively apply what they've learnt. Such self-expression empowers the player.

A LACK OF HARSHNESS FOR FAILING

If the player makes a mistake, the worst the game can do is force them to retry a level from the beginning. No single punishment undermines their progress, and all faults can be easily corrected. This type of environment encourages experimentation, but still maintains solid boundaries.

THE PLAYER CAN SEE THE RESULTS OF THEIR ACTIONS



Being able to see the effect that your actions have on the game world gives you a better context to understand not only how the mechanics work, but also the significance of your agency. Room 3 of *The Big Board*, for example, is only present to show the player the result of hitting the dice switch in the prior room.

SELF-TEACHING AND OWNERSHIP

One of the strengths of the video game medium is that it offers both teacher-based *and* individual learning. That is, the game designer can tell the player something directly or put them in a situation where they're forced to learn their way out. Cutscenes and text boxes are examples of the former. Below are three examples of the latter.

- » In Room 1 of *Monsoon Jungle*, Wario falls out of the vortex and into the water. The only way to reach Room 2 is to JUMP out of the water and onto the ledge. The player is left to realise for themselves that JUMP in water works just as it does on land.
- » In *The Curious Factory*, it's easy for Wario to be crushed into Flat Wario. Since Flat Wario can't clear blocks or reach raised platforms, the player must find a way back to the neutral state if they're to make progress.
- » In *Crescent Moon Village*, Harimen are placed on platforms next to blocks. The blocks are arranged so that Wario approaches them from above. By virtue of SMASH ATTACKING the blocks, Wario flips over the Harimen and reveals their weak point.

When the player thinks that they've learnt something by themselves, they feel possession over it². This is the ultimate goal of education, for students to take ownership of the things they've learnt.

As you can see by just these few examples, video games are rather sophisticated teachers. Although they're quite different from traditional teachers, aren't they? They're more like pre-planned education booby-traps under the guise of entertainment. We'll return to education with a lot more detail in the Level Analysis.

2 The key word being "thinks". In reality, games pull out all the stops so that it's impossible for the player to do anything, but teach themselves.

THE GAME DESIGN STYLE GUIDE

Play any game long enough and you begin to notice patterns. Document these patterns and you have a game design style guide that includes the designer's signature trademarks and reflects their ideas and principles. If I were to write such a guide for *Wario Land 4*, it'd look something like this.

THE PLAYER OFTEN LANDS ON THE FROG SWITCH WITHOUT WARNING

In six of the eighteen levels, Wario can fall on the frog switch, unwittingly activating the timer. Even though the designers constructed such situations to catch us off guard, because we develop trust in the game through play, we blame ourselves for letting Wario land on the switch. We rarely consider that the game would betray our trust. Thus, Wario falling on the frog switch is an example of our own lack of foresight. It's likely to prompt a bit of self-directed frustration.

Surprise is inherent to falling as vertical leeway beneath Wario is limited and the player doesn't have much control over his horizontal movement or the speed of his descent. By leading Wario to fall above the frog switch without the player knowing, the design instigates a moment of sudden surprise.

The feeling of frustration, surprise, or the combination of both creates an energy which best ought to be directed at the problem the player just set in motion, the timer. In the strangest way, the game's deceit draws on the player's emotion to encourage more concentration.

The rooms which facilitate the player's unwilling activation of the frog switch are free of—or isolated from—other arrangements. Therefore, the player is never left feeling that their falling on the frog switch forestalled them from exploring a part of the level they hadn't yet been to. That is, unless they overlooked a prior area, which would, of course, be their own fault. In levels where the player can choose when to press the frog switch, other arrangements are usually nearby. The player is free to deal with them first before flicking the switch at their leisure.

See: Monsoon Jungle, Golden Passage, The Curious Factory, Fiery Cavern, The Big Board, and Doodle Woods

SECRETS COME IN PAIRS

True of every significant secret. For each misplaced block concealing a hidden chamber, there'll be a clue to the next secret, if not another chamber behind it. This point ties in with scalable difficulty and the education principle "Players Who Don't Discover a Secret Aren't Explicitly Told What They've Missed Out On". By doubling up on secrets, players keen enough to look for secrets within secrets are rewarded for their effort, while those that don't unearth the second layer probably won't know about it and thus remain content in finding what they have.

ARRANGEMENTS DEVELOP GAME IDEAS BY STRESSING DIFFERENT FACETS OF THE MECHANICS, TRANSFORMATIONS, AND SKILL SPECTRUM

Game ideas are the exploration of mechanics and transformations through arrangements of game elements. The arrangements bring various facets of the mechanics and transformations into view while testing the player on different areas of the skill spectrum. In this way, a game idea can develop into an elaborate realisation of interactions.

Let's look at two examples, the first focusing on mechanics and the second on the skill spectrum. In Pinball Zone, the game idea is about throwing pinballs into catchers. The arrangements explore this concept by eliciting THROW, CHARGE THROW, JUMPING and THROWING, and the management of trajectories. In The Toxic Landfill, Rooms 1 and 2 test knowledge, Room 3 tests reflex and timing, and Room 4 tests knowledge and adaption.

MULTIFUNCTIONAL LEVEL DESIGN



Some rooms are custom designed around multiple states. For example, Room 1 of The Toxic Landfill. Pre-fold, the player, as Wario, can only follow the trail of crystals and clear the blockade on the right-hand side. The Spiky Balls and large gaps between platforms don't make much sense. Post-fold, the player, as Puffy Wario, can float up from underneath, dodging the Spiky Balls and manoeuvring around the platforms. This type of multifunctional design gets more mileage out of a single arrangement.

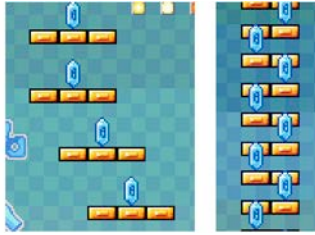
See: Crescent Moon Village, Room 8 and The Curious Factory, Room 2

VERTICALITY = CHALLENGE

Verticality is an excellent tool for creating challenge thanks to gravity and the dynamics of space. Because Wario is constantly pushed downwards by gravity, ascent is inherently difficult. The higher Wario is above the ground, the greater distance he has to fall, and therefore the riskier the jumps.

Wario Land 4's designers weave verticality into many areas of the game's design to great effect. For example, verticality as a lock (Room 2 of Curious Factory), projectile-throwing enemies placed above Wario (Iwao in pre-fold Fiery Cavern), and rewards positioned above the ground, with the biggest bounties at the highest points (Wildflower Fields and Arabian Nights).

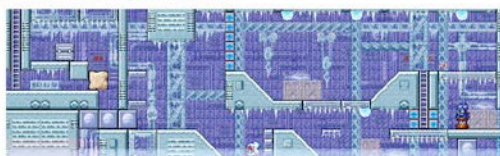
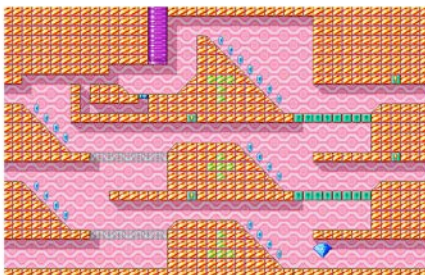
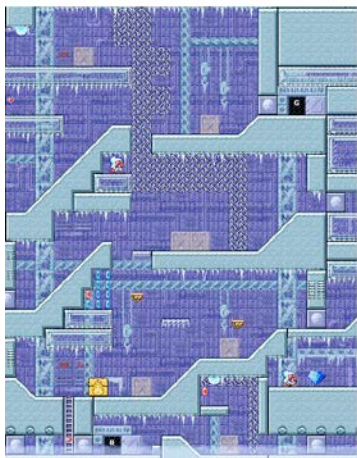
PLATFORM CLOSENESS AS A PSYCHOLOGY



The layout of platforms has a psychological effect on the player. Platforms separated enough to elicit a full JUMP create negative space as the player holds the A button and waits for Wario to reach the ledge. This short delay can make the player feel anxious as their inability to hasten the situation becomes apparent. Platforms stacked close together have the opposite effect. They excite the player as a jump of any height, any effort, is rewarded through the maintenance of their gradual ascension. One arrangement highlights the player's capacity, the other their incapacity. The more similarly-spaced platforms in succession, the more pronounced the psychology.

PADDING OUT THE PROCESS

Oftentimes, *Wario Land 4*'s larger arrangements are actually smaller arrangements padded out. Each arrangement hinges on a handful of core game elements. The larger arrangements either lock the key to one arrangement behind the lock of another or spread out the core game elements and fill in the gaps with mini-arrangements.



40 Below Fridge conveniently covers both examples. In Room 6, the upper arrangement is simply a padded out version of the lower arrangement. Both require Wario to transform into Snowman Wario and ROLL down a slope. The difference is that the upper arrangement uses platform, meshing, and Yukiotoko mini-arrangements to separate the key (snow clumps and slope) from the lock (snow block).

Room 2 is the ultimate example of a double-locked arrangement. To clear the snow blocks, the player needs to flick the frog switch which involves ROLLING in from Room 7 to remove the snow blocks in Room 4.

Having the player construct or deconstruct an arrangement also counts as double-locking. For example, in Doodle Woods's first puzzle room, the player must activate and deactivate the solid block bridges.

See: Doodle Woods, Room 5 and 6, and Pinball Zone (entire level)

DISTANCE USED TO CREATE TENSION

The post-fold is occasionally punctuated by long, empty stretches of terrain which create pockets of negative space. These moments, absent

of interactivity, make the timer's presence more strongly felt and thereby motivate the player to hurry up.

See: Pinball Zone, Room 10

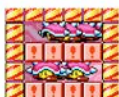
CONSTRUCTING THE PLAYER'S OWN SHORTSIGHTEDNESS

The post-fold timer, long lines of crystals, and series of hills littered with blocks best cleared with a DASH ATTACK are devices which tempt the player to speed ahead. By blindly taking the bait, it's easy for the player to lose sight of minor details in the environment. Some arrangements capitalise on this, hiding secrets along the same path the player's encouraged to zip past.

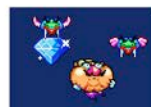
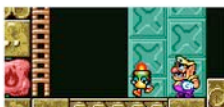
See: Monsoon Jungle, Room 7

POWER ROLES WITH THE ENEMY

Rather Favourable



Not So Favourable



The power that Wario has over enemies and the power that they have over him runs on a sliding scale dependent on either side's relative position to the other. At the start of a level, the arrangements favourably position Wario so that he can easily defeat enemies. For example, putting empty platforms above Spearman. Later though, the arrangements favour enemies, placing them where Wario is vulnerable. For example, putting Menhammer atop a slope Wario must climb.

See: Iwao in Fiery Cavern

THE MASTER OF YOUR OWN DOOM



Oftentimes, the game puts the player in a position where the actions needed to advance only subject them to greater challenge. Room 10 in 40 Below Fridge is one such example. The easiest way out of the room is to DASH ATTACK through the bottom row of ice blocks. Doing so drops the Yukiotoskos down to Wario's level where they command the floor with their ice breath projectiles. The centre row of ice blocks then trap Wario within range of their attacks. The easiest approach can therefore become the most challenging. This is particularly true if the player re-enters the room after nabbing the music CD.

ADDITIONAL ESSAYS

**THROUGH THE LENS OF INTERACTION + ASSOCIATION +
COGNITION AND APPLICATION**

DESIGNING FOR FREEDOM WITHIN LINEARITY

THROUGH THE LENS OF INTERACTION + ASSOCIATION + COGNITION AND APPLICATION

THROUGH THE LENS OF INTERACTION

Video games are understood through the vehicle of interaction, the avatar. The avatar's mechanics determine the interactions possible within the game world. The game world, as the landscape for interaction, realises the potential of the mechanics. The mechanics and game world define each other.

As the player embodies an avatar, they view the play space through the lens of the avatar's mechanics. Since mechanics depend on the game world for interaction and the game world is made up of game elements, the player sees game elements beyond their visual context, as objects of potential interaction. A rock isn't made of hardened dirt; it's something you **THROW**. The rock is defined by the avatar's mechanics and the game elements that it can be interacted with. For example, if Wario couldn't **PICK UP** a rock, it would change from a projectile to a prop. If throwing a rock didn't break blocks, then it'd lose meaning as a projectile.

This perspective allows the player to link disparate game elements to formulate interactions. On seeing a rock, the first thing the player thinks about is which game element they can then interact with using the projectile. *"Is there an enemy, switch block, or row of unit blocks nearby which I could possibly **CHARGE THROW** this rock at?"* By virtue of embodying an avatar and using their mechanics, the player interprets the game world as an interconnected system of which they are at the heart of.

ASSOCIATION SKILLS



Because the player sees the game world as an interconnected system, they can solve arrangements, such as the one above, where a crucial game element is out of sight. They do this by way of their association skills. So, to reach the purple pipe, the player needs to assume that the slope to the right of the silver chest leads to a row of unit blocks. What's fascinating about this example is that, unlike most arrangements which at least provide some visual prompts, it hinges entirely on the player's ability to hypothesise probable interactions.

COGNITION AND APPLICATION

Completing an arrangement is a two-part process. The player needs to realise the solution and then act it out. Coming up with the solution tests the player's ability to chain together corresponding game elements through interaction. This oftentimes also involves distinguishing interactive elements from non-interactive elements. It is the cognitive part of the process. Acting out the solution sees the player use Wario's mechanics to recreate the idea in their head. This part tests the player's dexterity, adaptation, reflex, and timing skills. At this point, the player is spurred on by the enthusiasm of seeing their imagined solution play out in-game. Because the arrangements require not only an understanding of the game system (knowledge), but the ability to apply that understanding (dexterity, adaption, reflex, timing), solving them is highly satisfying.

DESIGNING FOR FREEDOM WITHIN LINEARITY

Most games are linear. In *Super Mario Bros.*, the player starts at 1-1 and plays until they finish 8-4. In the *Zelda* and *Metroid* games, the player's progress is dictated by the linear acquirement of inventory. Even supposedly open world games like *Grand Theft Auto* only provide freedom within the constraints of the prompt to the next set of missions. Progression in video games is not a case of linear or non-linear, but different progression models offering different types of freedoms. We can say that a game like *Super Mario Bros.* has a fixed linear progression model, where the player has no freedom over progression (bar warp pipes), and a *Grand Theft Auto* has a freer linear progression model, where the player has some choice over the order in which they tackle the levels.

Wario Land 4, like *GTA*, uses a freer linear progression model. A passage is akin to a string of missions from a carrier. Within them, the levels can only be completed in a linear order, where each stage is progressively more difficult. When the final level, a boss room, is completed, the passage is cleared. Only after defeating the four bosses will the Golden Passage open up. Whichever order the player tackles the passages and whether or not they hop between uncompleted passages is up to them.

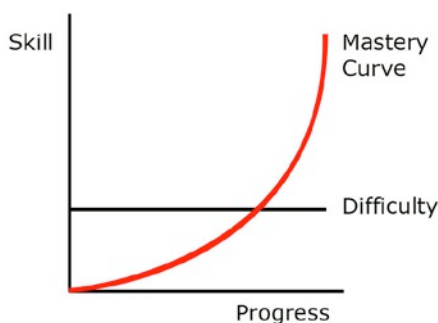
Freedom is given to the player for several reasons. In fixed linear games, if the player can't beat an arrangement, they're stuck until they can. Sure, they can distract themselves for a while with side quests, but eventually they'll have to return to that roadblock if they want to keep playing. Cast your mind back to the last time you got stuck in a *Zelda* dungeon and you'll get the idea. The freedom to switch between different levels allows the player to continue their progress even when stuck. The freer linear progression model also empowers the player through the ownership that comes from choice.



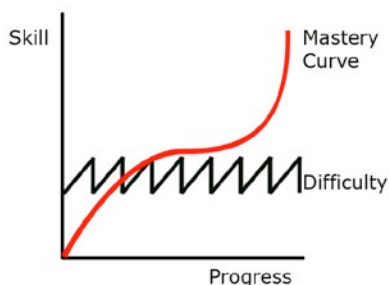
Progression and difficulty are best mapped as identical curves, with the latter just above the former, so that as the player progresses and gets better at the game, the difficulty rises to provide a consistent challenge. It's easy to design difficulty in games with fixed linear progression models: each stage is slightly more difficult than the last. It's tricky to map difficulty to games with freer linear progression models because of the design implications of choice¹. When the player is presented with a choice in how they advance through the game—no matter whether one option results in gameplay that's easier, harder, or just as challenging as the other—it's likely to lead to inconsistent difficulty. If the player chooses the harder option first, there'll be a spike in difficulty followed by a dip, vice versa for the easier option. If the two options lead to equally difficult portions of gameplay, then after completing the first, the player will be slightly better at the game, and the challenge of the second will become somewhat diluted. So games which use a freer linear progression model are more likely to have inconsistent difficulty levels and, thus, less engaging gameplay. How then does *Wario Land 4* maintain a balanced difficulty despite the freedom of its progression model?

Super Mario Land 2: Six Golden Coins, the progenitor of the *Wario Land* series, has an identical progression model to *Wario Land 4*. In answering this question, the designers decided to neuter the difficulty of each world to a samey mid level. The problem with this approach is that it doesn't mesh with the player's exponential mastery of the game. Because the difficulty is constant, the player will initially find the game too challenging, before it becomes increasingly easier to point of the disengagement.

¹ I say this under the assumption that the designers wish the player to see all the content and each branch leads to a significant chunk of content, not just the same material with a few tweaked variables.



Super Mario Land 2's saving grace is that within each world, the levels gradually become more difficult. The ramification for this though is that it increases the height from which the difficulty drops when the player finishes one world and starts another. The reset leaves the player reeling. In the initial levels of the subsequent world, they're likely to overwork themselves on the easier gameplay before dialling back their efforts as they recalibrate to the drop-off in challenge. By the last level, they're back in tune with the beat of difficulty, before the challenge dips once again. The inconsistent difficulty throws off the player's mastery. You can represent this phenomena visually like so:



Because the player gets used to the difficulty--and therefore adjusts their play behaviour to it before it falls off a cliff--the mastery curve is skewed. The red line is just an approximation of the mastery curve.

One fundamental difference between *Wario Land 4* and *Super Mario Land 2* is that *Wario Land 4* has far more mechanics and transformations than *Super Mario Land 2*. With more material for the player to master, *Wario Land 4* solves the difficulty problem by designating certain areas of the game system to each passage. The setup is roughly as below:

Entry Passage: Introduction of core mechanics and elements

Emerald Passage: Extended introduction, swimming mechanics, and Puffy Wario

Ruby Passage: Fat, Flat, Bouncy, and Snowman Wario

Topaz Passage: Level-exclusive gimmicks

Sapphire Passage: Zombie, Flaming, Frozen, and Vampire Bat Wario

Golden Passage: Final exam on core mechanics and elements

Because each part of the game system is more or less exclusive to its designated passage, the order in which the passages are completed is irrelevant.

There is one minor concession, however. Every passage tests the player on Wario's mechanics, the key game elements, and the main group of enemies, so the passage the player completes first *will* be more difficult than the passage they beat last, when they're more experienced with the game. At least in regards to basic gameplay. The arrangements test use of the mechanics in both familiar (jump onto a platform) and unfamiliar (throw a ball into a catcher while riding a moving platform) ways. So, although the player gets better at the game, they won't necessarily find the arrangements less engaging as a result. Furthermore, they also have the passage-exclusive material to keep them interested. So, there is a dip in difficulty, but it's more or less negligible.

Wario Land 4 addresses the inherent disparity between difficulty and player mastery of its freer linear progression model by making certain areas of the game system exclusive to certain passages. This way, the order of their completion is irrelevant. All passages test the player on the basics of the game system, so the player does develop a general competence. The arrangements, however, are varied enough to keep this from making the game noticeably less engaging. Not that it's much of an issue, anyways.

LEVEL ANALYSIS

ESSAYS ON LEVELS

LEVELS

ESSAYS ON LEVELS

ROOM SUSPENSION

FOLDED LEVEL DESIGN

SKILLS AND CHALLENGE TYPES

RESTRICTED-TO-FREER PRACTICE

TRANSFORMATIONS AND THE LEVEL DESIGN TOOL BOX

ROOMS, DOORS, AND CONSIDERATIONS

ROOM SUSPENSION

To understand the nature of *Wario Land 4*'s levels, we need to understand how the rooms are put together. The connection between rooms affects the potential scope of the arrangements and the way in which the player approaches them. The carryover of game elements from one room to another is called room suspension. It operates under the following rules:

- » Wario's animation and state (including transformations) continue between rooms
- » Enemies don't walk into other rooms
- » Enemies and projectiles disappear when more than 1 unit off-screen (through an entranceway) and can't be carried into other rooms (they disappear in the transition). Because putting them off-screen doesn't destroy them, they respawn in their original position when Wario re-enters the room.
- » The states and positions of enemies and projectiles are reset when Wario enters a room
- » Projectiles and transformative enemies respawn after perishing
- » Broken blocks don't respawn when Wario re-enters a room
- » Spoils disappear when they fall past an entranceway

From the rules outlined above, we can identify two core characteristics of room suspension in *Wario Land 4*. The first is that Wario's animation and state is carried over between rooms, yet enemies, projectiles, and spoils are lost in the transition. These elements are therefore confined to a single room. There are several reasons for this restriction:

- » By confining enemies, projectiles, and spoils to a single room, the arrangements are self-contained within these discrete architectural units which makes it easier for the player to read levels.
- » Projectiles and transformative enemies are often needed to solve arrangements. Allowing the player to move them out into another room, whether by accident or on purpose, would only create unnecessary burden and clutter the design. The player would have to leave the room to fetch the enemy or projectile and return back to where they originally found it. This type of design would also encourage the player to always carry a spare projectile with them, in case they needed it in a later part of the level.
- » Wario's animation continues between rooms because if it didn't, the game's flow would constantly be broken, particularly post-

fold when Wario passes through several rooms a minute. A lack of continuity in Wario's animation would also significantly lessen DASH ATTACK'S power.

- » Preserving transformations allows for multi-room navigational challenges which is critical given Wario's ability to cover large distances in these forms. For example, in Wildflower Fields, if the Puffy Wario transformation ended when Wario flew up into Room 1.5, then he'd fall back into Room 1 and never be able to reach the rewards. The arrangement would be meaningless. The only alternative is to connect the two rooms together which may be too much for the GBA's short-term memory to handle.



Without the suspension of transformations between rooms, Puffy Wario wouldn't be able to cross this divide.

- » Since all transformations operate under limitations, it doesn't matter that a transformed Wario can wander off into other rooms as he can't get very far anyway.
- » If enemies could walk into other rooms, they'd be able to undo arrangements by exiting the room before Wario could even reach them.
- » If enemies and projectiles could be hauled around from room to room, the GBA would have to store their positions into temporary memory. This would burden the hardware, particularly as the console would have to track and rewrite an enemy's position every time Wario re-enters a room and they become mobile again.

The second underlying characteristic of room suspension is that when Wario enters a room, the position and state of enemies and projectiles are reset and any projectiles and transformative enemies¹ that the player may have removed respawn.

There's only one explanation for this characteristic: it allows the player to

¹ Yukiotos being the exception. They do, however, respawn in the purple pipe puzzle rooms.

manually reset arrangements. Manual resetting allows for rooms with fail states, such as the purple pipe puzzle rooms, and acts as a panic button in case the game glitches. Leaving and re-entering a room is the most logical way to allow the player to reset arrangements as it's easy without being convenient enough to become a crutch.

As an aside, enemies that drop spoils don't respawn as the player could abuse their immortality for an infinite supply of coins and small hearts.

The rules that govern the transitions between rooms are illogical in the real world, but wholly suitable to *Wario Land 4*, where they simplify gameplay and empower the player. *Wario Land 4*'s room suspension does enforce a one-room-one-arrangement design which limits the potential for elaborate, interconnected game ideas, however, it ultimately does so for clarity and playability.

FOLDED LEVEL DESIGN

You've played *Wario Land 4*'s levels, right? Of course you have. This means you probably already know what I'm about to say, right? Good. Like a game review ready to face players who've been drip fed positive marketing press for the past 6 months, allow me to validate your assumptions.

Folded level design is used throughout all eighteen of *Wario Land 4*'s levels, defining much of the game's character. In a normal level, the player makes their way from one side of the stage to the other. In a folded level, the player makes their way to the other side of the stage and then turns around and goes back to the start. The journey to the midpoint is different from the trek back to the start as the player approaches the level from different directions. The name, folded level design, is analogous to folding a piece of paper in half. There's a fold (the midpoint) and two sides of paper (the pre- and post-fold).

In *Wario Land 4*, folded level design is established by three sets of locks and keys: the vortex and frog switch, level doors and Keyzer, and boss room doors and jewel pieces. Each passage is locked down by a series of doors. The doors between levels can only be opened by Keyzers, while the boss room door requires a completed jewel from each stage. The frog switches in the passage open up vortexes which transport Wario into the levels where he can collect these keys. Once he's in though, the vortex closes and the player must find and activate a second frog switch so that they can exit the level, hopefully returning to the pyramid with a completed jewel in hand and Keyzer floating just behind.

Folded level design has the player familiarise themselves with the level in the pre-fold only to force them to readapt that knowledge to the post-fold. Here's a real-life example taken from Richard Terrell¹:

"The genius of folded level design is in how it develops a set of knowledge for the player and then manipulates it. In the cat tree rescue example, climbing up a tree is a challenge due to gravity, footing, and visibility. While ascending, one would gather knowledge about the arrangement and strength of the branches. Using both arms and legs, one would climb up the tree one step at a time. Upon reaching the top and with the cat (the crease [fold]) in hand, the challenge is folded...Now the climber has one less arm/hand to use, the pole like branches are transformed into downward steps, and the cat must be protected from stray branches. In this scenario, the knowledge of climbing branches is reanalyzed. A great path going up, could be a risky path going down."

1 Folded Level Design: <http://critical-gaming.squarespace.com/blog/2008/8/5/folded-level-design.html>

CONSIDERATIONS

There's an inherent freshness to the gameplay post-fold as the player retraces their steps from a different perspective. This in itself makes the backtracking more interesting. Considering though that all levels are folded, approaching the stage from the opposite end isn't enough on its own to stop the retread from growing stale. Fortunately, the designers took additional measures to make the post-fold more engaging, including:

- » Adding a timer
- » Activating solid crystals from outlines
- » Changing the enemies
- » Changing the terrain
- » Rerouting the path through new rooms

As we discussed in the engagement section, timers add a tension to gameplay which make it more engaging. The post-fold timer also modifies the relative state of the pre-fold. The pre-fold acts as a tutorial to the level-specific elements and arrangements, easing the player in. With no time limit, they can freely explore the level as they wish. The relaxed nature of the pre-fold sets the player up to be caught off guard by the hurried escape that follows. Having familiarised themselves with the game idea, the player is then put to the test, thanks to the time limitation. Just the presence of the timer sparks haste, prompting the player to change their play style. The timer differentiates the two halves by designating the pre-fold to free exploration and the post-fold to hasty execution, in turn, strengthening the folded level design.

The other changes fan the flames of tension by subverting the player's understanding of the level. Different enemies require different tactics. Modified terrain calls for fresh approaches to navigation. New rooms mixed in amongst the old material subverts the very notion of backtracking. These factors add new wrinkles to the post-fold that the player must bend their knowledge of the level around.

Not all of the changes post-fold are created by the game designer, some develop organically from the player's actions in the pre-fold. For example, the arrangements of blocks, crystals, enemies, and chests.

Given the major, minor, artificial, and organic modifications, there's an unexpected diversity to the second half of the levels.

The player has three goals for each level: nab the Keyzer, find the four jewel pieces, and escape in time. The former two are dependent on the latter. The post-fold is a tense climax not just because there's a time limit, but because the player's efforts sit in jeopardy.

Because the post-fold is governed by a timer, it's invariably shorter than the pre-fold.

Wario must step on the frog switch to activate it. This allows the player to choose when to start the timer, which is important because it gives them the opportunity to finish what they're doing before they commit to the post-fold sprint.

Folded level design is an economical way to make use of a level's design. The pre-fold content is recycled in the post-fold.

Because folded level design is the guiding philosophy behind the levels, the stages are designed around the respective needs of the pre- and post-fold. For example, verticality is often used to make the trek to the frog switch longer than the escape to the vortex, as is the case in Domino Row and The Curious Factory. Pre-fold, the player travels from the bottom of the level to the top. Post-fold, they can just fall back down, avoiding obstacles along the way. This design suits the pre- and post-fold as ascent takes longer than descent. By the same token, Wario never falls down a drop which he can't then climb back out of post-fold, unless, of course, he's rerouted through other rooms. This room from Toy Block Tower is one such example:



In every level, the player encounters the purple pipes in the pre-fold, where they have enough time to think through and complete the puzzle rooms. (There is one exception in The Big Board, however). Wario can still enter the pipes post-fold, but because the player first runs into them pre-fold, they're more likely to tackle them there.

The levels tend to either augment or abandon pre-fold game ideas post-fold. Levels which continue a game idea post-fold do so because the properties of the post-fold enhance and help develop the concept. For example, new rooms offer extra arrangements to larger game ideas (Arabian Nights), the timer adds a stress factor (The Big Board), and so on. Levels which abandon a game idea post-fold do so because the conditions of the post-fold don't suit the game idea.

On the other hand, a game idea doesn't have to be present pre-fold; it can be exclusive to the post-fold. For example, the environmental shift in Fiery Cavern. In these cases, the pre-fold can be littered with game elements which are only active or in reach post-fold. Allusions to potential interactivity like this act as curiosity markers which encourage the player to continue playing in order to discover their purpose. This is also true of areas of the post-fold visible in the pre-fold.

TYPES OF FOLDING

Contrary to what you might expect, not all levels are folded the same way. There's a genuine diversity to *Wario Land 4*'s papercraft. I've organised the levels into six groups based on their distinct takes on folded level design.

PURE FOLD

Levels: Palm Tree Paradise, Crescent Moon Village, The Big Board

In pure fold levels, the player passes through all the main rooms twice, once pre- and once post-fold. More measures are therefore needed to freshen up the backtracking. Crystal outlines, Yurei's pursuit of the Keyzer, and a shorter post-fold timer are examples of such measures from the three pure fold levels. Crystals tempt the player to take the more time-consuming paths (risk/reward). Yurei gives the player another variable to monitor. The shorter the timer, the more concentration needed to reach the vortex. Pure folds also benefit the most from the player's modifications to the pre-fold.

REROUTE

Levels: Mystic Lake, Monsoon Jungle², Doodle Woods, The Curious Factory, The Toxic Landfill, 40 Below Fridge, Arabian Night, Toy Block Tower

Reroutes shuttle the player through rooms exclusive to the post-fold. The proportion of pre- to post-fold content can skew to the pre-fold (The Curious Factory), post-fold (Arabian Nights), or an even mix of both (Doodle Woods). These levels employ height, frog blocks, and level-exclusive devices to limit the player from re-entering pre-fold rooms.

² Monsoon Jungle can be a pure fold too, but since the layout makes it easier for the player to take the reroute, it falls under this category.

A trend amongst reroutes is that the path to the frog switch sits above the path to the vortex. This layout fits nicely with the context of Wario escaping through the sewers, a basement or underground, as is the case in Arabian Nights, The Curious Factory, Toy Block Tower, and Monsoon Jungle.

Because the post-fold contains new arrangements, the reroute template is suitable for game ideas that are too big for the pre-fold. Clearing new rooms takes considerably more time than simply speed-running through pre-fold rooms. So to maintain the 3:2 time ratio spent in the pre- and post-fold, there are only ever two to three fully fleshed out post-fold-exclusive rooms and they tend to beeline straight to the vortex.

SKIRTING ALONG THE FOLD

Levels: Pinball Zone, Wildflower Fields, Domino Row, Golden Passage

Fold-skirting levels could technically be classed as both pure folds *and* reroutes. In these levels, the player passes through the pre-fold rooms twice, but are rerouted through isolated channels restricted to the post-fold. Since parts of these passages are visible pre-fold, they foster curiosity, leading to a eureka moment when the big picture is finally revealed post-fold. Levels which skirt the fold need some means of sectioning out the post-fold channel, whether it be with an isolated passage, an underground waterway, a ground area and canopy, or locks withholding post-fold shortcuts.

ENVIRONMENTAL UPHEAVAL

Environmental upheavals blend aspects of the other folds together. The Fiery Cavern is the only level which belongs in this category. Flicking the frog switch freezes over the volcanic landscape. Only the rudimentary architecture remains the same. The changes include:

- » Some surfaces become slippery
- » Iwaos become Yukiotos
- » Snow and icicles fall from the ceiling
- » Lava geysers freeze up, providing access to post-fold-exclusive rooms and areas, while blocking off parts of the pre-fold

These modifications, along with the post-fold timer and approaching the arrangements from the opposite direction, create a post-fold which is both familiar and entirely new.

DOG EAR

The Hall of Hieroglyphics has the shortest post-fold in the game. The vortex and frog switch share the same screen space so that the player can see the interplay between them.



THE HOTEL

Hotel Horror is a pure fold level with multiple branching paths that can be utilised both pre- and post-fold. The frog switch opens two doors in the building, both of which lead to the music CD. The folded level design therefore creates a short-term memory exercise with the player needing to remember the room numbers of the locked doors and return to them post-fold.

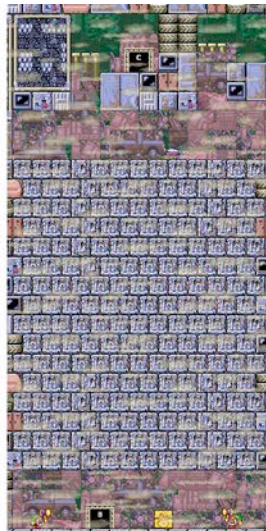
SKILLS AND CHALLENGE TYPES

Wario Land 4's levels are obstacle courses which test the player's skills. That is, their dexterity, knowledge, adaption, reflex, and timing. The levels do this through a variety of means, several of which I explore below:

RETAINING INFORMATION (KNOWLEDGE)

In schools which focus on skill and drill—that is to say, most of them—students usually memorise something so that they can later paste it wholesale onto an exam paper. In *Wario Land 4*, players usually memorise something so that they can later act upon it. Schools treat information as a static entity, which you either know or you don't, while games treat information as a dynamic tool.

In *Wario Land 4*, information retention exercises use the distance between where the player finds the data and where they then act on it to create a window of time in which the player must store the information in their temporary memory. This data—which may be, for example, the layout of platforms, relative position of an object, or number of squares on the playing board—is altered by the player when they act upon it.



Take Room 4 of The Toxic Landfill as an example. The player uses the Menhammer to transform into Bouncy Wario and spring jump through the weak blocks. Assuming that Wario doesn't make it up one of the two exit channels, on the player's first jump, he'll hit the lower ceiling. With Wario atop of the weak blocks, the player can see the upper half of the room and determine the horizontal location of the channels. Since Wario can't reach them though, the player must remember their relative positions and head back down to the ground floor. The wall of weak blocks establish the time in which the information must be retained. Once Wario returns to the ground, the player needs to recall one of the two locations, transform, and then spring jump back up.

Information is dynamic in three ways. Firstly, the information, the relative position of either channel, changes as the player moves Wario away from where they originally took the data. The player therefore needs to constantly monitor, check, and confirm the information.

Secondly, how the player remembers (monitors, checks, and confirms) the information is up to them. Do they count the number of weak blocks away from the cleared path? Count the number of blocks from the wall? Store a rough position and then recall it through brute force? Or SMASH ATTACK in a straight line directly underneath one of the channels so that they don't need to memorise at all, effectively trading time for short-term memory skills?

Thirdly, every time Bouncy Wario spring jumps, the player is reminded of the exits' locations. Yet, at the same time, he clears a new path through the weak blocks, altering the visual markers which help the player retain the information.

More Examples: Room 6 of Monsoon Jungle, Room 2 of Mystic Lake, Room 7 of Wildflower Fields

OBSERVATION (KNOWLEDGE)



Many secrets are hidden behind breakable terrain or blocks which look like they're part of the environment. To snuff them out, the player needs to spot interactive game elements amongst non-interactive window dressing. This means looking for inconsistencies in patterns or following clues which imply that a certain chunk of terrain is breakable. Observation is unique from the other examples in that it's not exclusively tied to the main arrangements. There's always the potential for something to be hidden where we least expect it. The image above has a few examples.

More Examples: The Toxic Landfill

SPEED CHALLENGES (DEXTERITY, REFLEX, TIMING)

Speed challenges test the player's ability to complete a task within a strict time limit. The majority of these trials come from the post-fold timer.

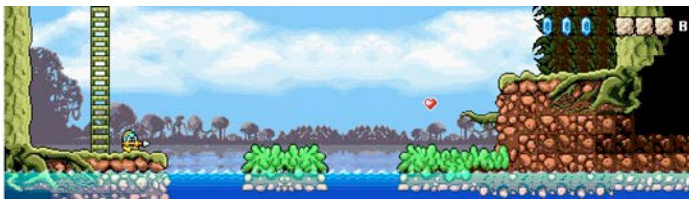
More Examples: Domino Row

NAVIGATION CHALLENGES (DEXTERITY, REFLEX, TIMING)

These tests involve the player steering Wario around obstacles to reach an end point. One could argue that the entire game is one big navigation challenge, and they'd be correct. In this case, I'm referring to contained instances, such as clearing a set of platforms. The transformation-based arrangements are all navigation challenges, or at least have a strong navigation component. Space, gravity, and the limitations of Wario's state make these trials engaging.

More Examples: Wildflower Fields, Room 5

DEDUCTIVE REASONING (KNOWLEDGE)



Deductive reasoning arrangements test the player's ability to link game elements together through mechanics. Room 2 of Mystic Lake has a simple example. The player notices the line of unit blocks and recalls that they

need a projectile to floss out a path. They return to the left-hand side and spot the Spearman. Through association and deduction, the player mentally solves the problem, which they then act out by nabbing the Spearman and CHARGE THROWING it into the blocks. Deductive reasoning requires a solid understanding of the game world and its interaction systems.

KNOWLEDGE SUBVERSION (ADAPTION)

Subversion of the player's knowledge is common throughout play. Yurei's active pursuit of coins and then the Keyzer being one such example. It is, however, most prominent as a result of the divergences between the pre- and post-fold.

EXPERIMENTATION (ADAPTION)

After the player's completed the Hall of Hieroglyphs, *Wario Land 4*'s tutorial level, they're thrown into an unfamiliar world where the only way to get on is to play around with the tools they have. Experimentation is inherent to play because, after all, playing is learning.



There are, however, some arrangements which directly elicit experimentation from the player. For example, in Room 6.5 of *Arabian Nights*, there's not enough space on the raised platform to clear the thick block with a DASH ATTACK. However, by messing around with the carpet, the player will realise that they can charge the DASH ATTACK on the rug, only to run off after it touches the platform.

As you read more of the Level Analysis, you'll probably notice a few other types of challenges that frequently pop up throughout the game. So be on the look out.

RESTRICTED-TO-FREER PRACTICE

Wario Land 4's levels follow a restricted-to-freer practice model of education to first introduce and then allow the player to take ownership of game ideas. The model determines the organisation of rooms and nature of the arrangements. Each level can be broken down into the following parts:

1. Introduction (warmer)
2. A fail-proof take on the game idea in its most minimalist form (restricted practice)
3. A more sophisticated take on the game idea (restricted/freer practice)
4. An open-ended take on the game idea (freest form of practice)
5. Post-fold dash/test (final exam)

Each part consists of one to four rooms, depending on the level.

To understand this model of education¹ and its influence on the level design, let's use The Big Board as a case study. The game idea for this level is the board game. More information can be found in the Levels section.

INTRODUCTION



The introduction serves to reacquaint the player with the game and familiarise them with the visual context of the level. Unlike, say, *Super Mario Bros.*, where the same core elements are used throughout the game, in *Wario Land 4*, the appearance of the ground, walls, ceiling, enemies, and blocks can change from level to level. It's critical then that the first room acts as a visual point of reference so the player can identify the staple game

¹ Restricted-to-freer practice isn't just something I made up. It's a genuine education methodology, just like test-teach-test.

elements from the get-go. In The Big Board, Room 1 includes all of the aforementioned examples.

Thanks to the auto-save feature, the player is free to turn off the console and take a break between levels. The introduction therefore functions as both a warm up to gameplay for returning players and a cool down from the post-fold sprint of the prior level for continuing players. Room 1 of The Big Board only requires the jump mechanics, but the player is free to mix up the interactions as they see fit.

A FAIL-PROOF TAKE ON THE GAME IDEA



The game idea debuts. The rest of the level depends on the player understanding the game idea, so it's presented in its minimalist form and can't be avoided. The rooms are small and narrow so as to focus the player's attention.

To clear Room 2 of The Big Board, the player must flick the dice switch and land on an outline square to activate the platform. The initial six squares turn the outlines into solid blocks, so the player's success is guaranteed. The platform ensures that they can only progress after they participate in the game idea. The room is small, limited to the one arrangement, and the only potential distraction, the Toy Car, is separated by water. The dice switch and right-hand wall are far enough off the ground that the player can't STOMP JUMP up onto them and bypass the arrangement.

A MORE SOPHISTICATED TAKE ON THE GAME IDEA

The first two steps only need two rooms at most to get their point across, but sometimes they take three or four. For example, in Big Board, there's an extra room after the fail-proof take on the game idea which shows how the board effects carry over between rooms. The more sophisticated applications of the game idea usually cover three to four rooms with the arrangements becoming freer and more elaborate the further along.



The image shows how the game idea develops across multiple rooms. Fire blocks, unit blocks, thick blocks, and unit-high passages over water² act as locks, while the transformation and enemy squares on the board are the keys. The game idea extends beyond the dice switch, game board, and jumping mechanics to include the potential interactions between the listed locks and keys. The onus is shifted from landing on the right square to landing on the right square and using the outcome to then claim a reward.

These rooms are more spacious and less restrictive than the initial rooms. They're roughly double the size of Room 2, and the player's given the choice of not participating in the puzzles if they don't want to. Since the

2 Factor in the outline platform and you have a semi-double-lock.

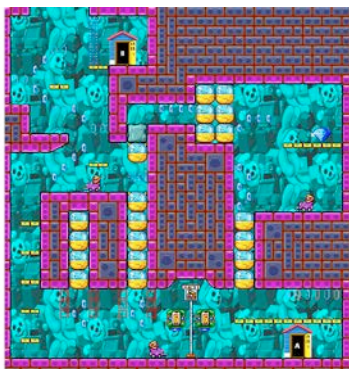
arrangements are more substantial than just rolling the dice, they have more scope. Take the first room as an example. The branches of potential interaction hinge on whether or not the player:

- » Chooses to attempt the arrangement
- » Rolls the right number once, twice, or not at all
- » Rolls the right number on their first or second attempt
- » Succeeds in reaching the fire blocks as Flaming Wario
- » Explores the underground area before/after they clear or don't clear the blocks
- » Allows the enemies to hurt Wario

Because of the wide range of possible divergences, the player's experience is more personalised.

AN OPEN-ENDED TAKE ON THE GAME IDEA

The freer practice comes to a head with an open-ended arrangement. Now that the player is proficient with the game idea, the game can remove the scaffolding which previously assisted them. Since these arrangements are larger and tend to facilitate a broader range of approaches, there's usually only one or two of them per level. The increase in size also sees soft punishments replace the majority of enemies.



Open-ended arrangements usually offer multiple points of entry. In Big Board, there are three channels which Bouncy Wario can spring up through. The catch is that there's only two dice switches, meaning that, at most, the player can only explore two of the three channels. One of them's a dead end (left), another reveals a hidden diamond (right), and the last breaks the thick block leading to the reward (middle). Even though the player can clear a path to the diamond, they must wait until the post-fold to claim it. The game idea reaches its peak as:

- » Exploring the area around the channels to worm out the dead end
- » Landing on the right square
- » Using the outcome to clear a path to the diamond
- » Remembering to claim the reward post-fold

Because of the two additional steps and the multiple ways to apply the outcome of the dice roll, the player can express themselves more deeply than before. With more conditions to meet, there's also greater chance of failure and time wasting. That is to say, more convenience punishments.

POST-FOLD DASH/TEST

Having learnt, mastered, and taken ownership of the game idea, the player is finally ready to be put to the test. Since not all concepts work well under a time limitation, in some levels, the open-ended take on the game idea is the height of its application. In these cases, the post-fold does not continue the pre-fold game idea, instead, it opts for a new idea or the sprint to the vortex.



In Big Board, the exam focuses on the dice roll aspect of the game idea, its essence. The player must roll until they reach the last square on the board. The trick is that if they roll more than the number of squares needed to land on the final square, then they'll head back in the opposite direction X number of excess squares. This is the crux of the post-fold test: it forces the player to roll the right number. After landing on the last square, the floor is removed and the player can flee to the vortex.

TWEAKS TO THE MODEL

Every level uses the restricted-to-freer model, but not all follow each step to a tee. Any changes made are done so for the sake of the game idea. Some game ideas are more difficult, so they need more tutorial time. Some levels

juggle multiple key concepts. Here are a few examples of divergences to the formula:

Hotel Horror: The organisation of rooms *is* the game idea. Thus, the model applies more loosely.

Wildflower Fields: There's no introduction.

40 Below Fridge: The introduction is extended because of the knotted structure of the level.

Crescent Moon Village: Each room bounces between the Yurei and Halloween transformations game ideas.

TRANSFORMATIONS AND THE LEVEL DESIGN TOOL BOX

The transformations are governed by cure, contact, and timer limitations which restrict the distance that can be covered when transformed. With timers, there's only so far Wario can go in a short amount of time. With contacts, the walls and ceilings box Wario into a finite space. With cures, the curing items (water, light, decompressors) define the area of access.

Since Wario can only remain in the transformation state within a tight proximity to where he was first transformed, the arrangements pertinent to the transformations are always close to the elements that start the transformation. Because each transformation lasts for a certain amount of time, there needs to be enough level for a transformed Wario to interact with to fill that time. If the transformation-specific arrangements aren't large enough or are too far from the transformation element, then the player can't get much out of them.

The game world is constructed of game elements which facilitate interaction using the mechanics. That is, platforms to jump on, enemies to attack, blocks to destroy, crystals to grab, slopes to roll down, and so on. These game elements are the building blocks of *Wario Land 4*'s level design. In the design toolbox, they're small and portable. Even a few crystals above a platform constitute an arrangement. Because their limitations necessitate fully-featured arrangements, transformations are the largest building blocks in the design toolbox. Since rooms divide a level into key arrangements, transformations tend to fill an entire room. Where the game designer can easily sneak in a few platforms or crystals here and there, adding transformations forces them to consider the overall framework of the level.

ROOMS, DOORS, AND CONSIDERATIONS

ROOMS

Rooms in a house divide the living quarters into purpose-built chunks. There's a room for eating, sleeping, watching TV, washing your clothes, and going to the toilet. When the area you live is organised by use, it's easier to manage your life at home.

Rooms in *Wario Land 4* divide the levels into purpose-built chunks. There's a room for JUMPING, ATTACKING, and JUMPING while ATTACKING. When the area you play is organised by interaction, it's easier to develop coherent gameplay.

Rooms are defined by four things: their visual outline, the camera's bounding box, the fade out, and the rules of room suspension. Without these devices, rooms could not be discrete units of gameplay.



Each level is underpinned by a game idea and each room is designated to servicing part of that idea. Not every room is focused on the larger narrative though. Some are just conduits connecting the main rooms. Half of these “bridge rooms” are warmers which ease the player back into play. Like Room 3 of 40 Below Fridge (above, left). The other half are born out of functional necessity. Take Room 1 of Mystic Lake (above, right), isolating the vortex neatens up Room 2 and builds a little pre-arrangement anticipation.

Because the level design follows a model of restricted-to-freer practice, if you were to line up a stage's rooms in sequential order, you'd notice that they gradually increase in size. The reason being that smaller rooms accommodate the movement limitations of restricted practice, where larger rooms accommodate the exploration and convenience punishments of freer practice.

DOORS

There are three types of doors: entranceways which Wario walks or falls through, (conventional) doors that are entered by pressing the up arm of the d-pad, and pipes that are entered by pressing the down arm of the d-pad. Entranceways connect rooms horizontally and vertically, pipes connect rooms vertically, and doors connect rooms in layers. By virtue of adding layers above and below the default layer, doors lead to a peculiar oversight: do all the rooms join up or are there discrepancies between the layers?

Let's look at Wildflower Fields as an example¹. Room 4 is on the default layer. Room 4 leads to Room 5 through door A. Room 5 leads to Room 6 through door B. Room 6 returns Wario to the default layer through door C. Wario crosses three layers on his way from Room 4 to Room 7. If a door sends Wario up or down one layer, then it doesn't make sense that he can traverse three layers and end up back on the default layer. This only works if door C is two layers deep. Because the side-on perspective makes the doors appear flat though, we have no way of visually inferring the door's "depth", and therefore no means by which to understand the connections between rooms. Thus, players overlook these inconsistencies.

The same logic applies to how rooms above or below the default layer don't appear in the foreground or background. Occasionally there are, however, allusions to such rooms as with Wildflower Field's giant sunflower or the mosque in the background of Arabian Nights.



In case you're wondering what *Wario Land 4* would look like if the front and back layers did appear in the foreground and background, the *Klonoa*

¹ Wildflower Fields Map: <http://danielprimed.com/wp-content/uploads/2012/11/wildflower-fields.png>
Don't be fooled by the underground setting. We're talking about depth, not height.

games make a good point of reference. Alternatively, the transitions between doors could be altered to accurately reflect Wario moving away from the default layer. For example, Wario could walk towards or away from the screen, with the subsequent room fading into existence as he approaches. The depth problem could then be accounted for by extending Wario's walking animation.

LEVELS

LEVELS INTRODUCTION

ENTRY PASSAGE: HALL OF HIEROGLYPHS

EMERALD PASSAGE: PALM TREE PARADISE

EMERALD PASSAGE: WILDFLOWER FIELDS

EMERALD PASSAGE: MYSTIC LAKE

EMERALD PASSAGE: MONSOON JUNGLE

RUBY PASSAGE: THE CURIOUS FACTORY

RUBY PASSAGE: THE TOXIC LANDFILL

RUBY PASSAGE: 40 BELOW FRIDGE

RUBY PASSAGE: PINBALL ZONE

TOPAZ PASSAGE: TOY BLOCK TOWER

TOPAZ PASSAGE: THE BIG BOARD

TOPAZ PASSAGE: DOODLE WOODS

TOPAZ PASSAGE: DOMINO ROW

SAPPHIRE PASSAGE: CRESCENT MOON VILLAGE

SAPPHIRE PASSAGE: ARABIAN NIGHT

SAPPHIRE PASSAGE: FIERY CAVERN

SAPPHIRE PASSAGE: HOTEL HORROR

GOLDEN PASSAGE

PURPLE PIPE PUZZLE ROOMS

BOSSSES

PASSAGE THEMES

MINI-GAMES

LEVELS INTRODUCTION

Now that we have a deep understanding of *Wario Land 4*'s game system, we can apply our knowledge to the levels. There are eighteen levels, thirty-three purple pipe puzzle rooms, and six boss battles. Levels are discussed in sequential order, going anti-clockwise from the Entry Passage. I analyse the puzzle rooms and boss battles individually at the end as they have no direct relation to the levels. Although the focus is on normal difficulty, I do occasionally make remarks about hard and super hard.

For each level, the analysis is broken into the following headings:

Lowdown: Essential information distilled into a bite-sized format.

Introduction: A grab bag of key observations. I tend to talk most about visual setting, prominent design patterns, and any connections with other levels in the passage.

Game Idea: An extended account of the narrative and its construction.

Game Idea Timeline: The evolution of the game idea.

Room-by-Room Analysis: An exploration of each room in detail.

The main part of the Levels section is the room-by-room analysis. This is where I take everything taught in the rest of the book and apply it in context. The focus of the analysis depends on the individual rooms. I cover a wide variety of topics which include, but are not limited to space, narrative, education, engagement, music, counterpoint, the camera, level design, room suspension, the skill spectrum, curiosity and subversion, punishments and rewards, and player psychology and manipulation.

The analysis follows a consistent structure. For each room, I introduce the key points of interest before exploring the pertinent topics one by one, starting with the most relevant. I try not to repeat similar observations multiple times. Given that you're a committed reader, which I believe you are, the more you read, the better you'll be at pointing out these details by yourself.

As a reminder, I capitalise the word "room" when in reference to a one of the numbered rooms in a level, such as Room 1 of the Hall of Hieroglyphs.

I have included images of each room along with the commentary. Depending on how you're reading the book (physical copy, Kindle, tablet), you may also wish to use the online reference for clearer, full-sized maps¹.

1 Online Reference—<http://danielprimed.com/warioland4/>

ENTRY PASSAGE: HALL OF HIEROGLYPHS

LOWDOWN

Passage: Entry Passage

Level Number: 1 of 1

Visual Theme: Egyptian pyramid

Game Idea: Tutorial

Key Level Elements: Blocks, rocks, platforms

Folding: Dog ear

Fold Measures: Frog blocks, height

Enemies: Marumen, Spearmen

Number of Enemies: 18

Heart Medallion: Yes

Number of Floating Hearts: 1

INTRODUCTION

Wario Land 4 is set in the Golden Pyramid. Paintings hung in the passages connected to the main hub represent levels which Wario warps into by way of a neighbouring frog switch opening up a vortex. As the tutorial level, the Hall of Hieroglyphs prepares the player by not just introducing the mechanics, but using the pyramid as its setting. Even though Wario is technically warped out of the pyramid, by being the first level, the aesthetics of the overworld are established early on in the player's mind. Without the Hall of Hieroglyphs and Golden Passage—the latter also set in the pyramid—to tie together the levels and overworld, the Golden Pyramid would feel disconnected from the stages.

As an introduction to *Wario Land 4*'s gameplay, the Hall of Hieroglyphs covers ATTACK, DASH ATTACK, CLIMB, THROW, ROLL, HEIGHTENED SMASH ATTACK, the key nuances of these mechanics as well as Marumen, Spearmen, experimentation, observation, essential level elements, and the rules of room suspension.

For each mechanic, there's a room of restricted practice which acts as the formal introduction. In these rooms, the bounding boxes segment the area by arrangements. Each arrangement focuses on one aspect of the mechanic, such as throwing horizontally, throwing vertically, and what happens when

projectiles are thrown off-screen. The arrangements create a common sense that the player willingly goes along with, subconsciously teaching themselves how to use the mechanics. For example, in Room 1, there are platforms above Wario and nothing else to interact with. What else is a player to do but press all the buttons until Wario jumps? Just like that, the player has taught themselves the JUMP mechanic. This common sense extends to the finer details of the mechanics too. For example, by putting a regular block in front of a thick block, the player is likely to DASH ATTACK through the two blocks and thus realise that the mechanic breaks both. Between the rooms of restricted practice are pockets of freer practice. These opportunities allow the player to play around with the mechanics they just learnt and take ownership of them.

The groupings of restricted and freer practice rooms and the arrangements within them are organised by functional importance. So the player learns how to JUMP before learning how to ROLL. Within the JUMP tutorial, JUMPING onto platforms is taught before JUMPING on enemies.

The level follows a uniform structure which gives it a predictable flow of restricted to freer practice and back again. The consistency minimises distraction and reduces the number of things the player needs to think about, thus allowing them to focus on the arrangements. Uniformity builds the player's trust in and reliance upon the level design. Some rooms deviate slightly from the pattern to draw the player's attention to particular elements.

The Hall of Hieroglyphs only introduces the most important features of the game. The adjacent Emerald Passage continues the tutorial, covering swimming, transformations, and other variants of folded level design.

GAME IDEA

The game idea is the tutorial as each set of rooms introduces a new mechanic.

GAME IDEA TIMELINE

As stated, the game idea operates under pairings of restricted and freer practice, switching to a new mechanic every few rooms.

ROOM-BY-ROOM ANALYSIS

ROOM 1



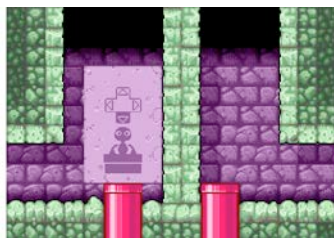
The tutorial begins in Room 1, starting with the simplest mechanic, JUMP. The only way to get to Room 2 is to ascend the platforms. Height is the lock. JUMP is the key.

Wario only needs to JUMP to ascend the four platforms. Clearing the ledge by the entranceway though, requires JUMPING and horizontal movement at the same time. Assuming the player holds the A button down for the same duration each JUMP, they're likely to notice how Wario rises just that bit higher on the second to last jump. The third and fourth platforms are closer together to facilitate a slight over-jump which draws the player's attention to the way the duration of the press affects the height of the JUMP.

The sign in the background is blank. The game doesn't tell the player how to jump, let alone explain the nuances mentioned in the former paragraph. It's important that they realise these things for themselves so that they feel that they're independent and have ownership over the mechanic. In one room, the player is introduced to JUMP, JUMPING and moving, through platforms, and how the hardness of the press affects the height of the JUMP. As for the sign, its blankness makes it a curiosity marker that reveals itself post-fold.

Many of the essential level elements—the vortex, frog switch, frog blocks, and frog block outlines—are present in this first room. As Wario exits the vortex, it closes and the frog switch locks into place. Because the two animate simultaneously and share the same screen, a relationship is suggested. The visual likeness of the frog blocks and outlines also denote a relationship. It wouldn't be a stretch for the player to correctly guess their use.

ROOM 2



The sign shows the player how to enter the pipe. Entering pipes isn't as self-explanatory as JUMPING, so a little instruction is needed. Note that Wario only needs to make a short JUMP to get on top of the pipe. Length of press is still relevant.

The pipes take Wario down to or bring him up from the room directly below. Even though they share the same screen space, which suggests that they're connected, they're not. The form implies an idea which is then invalidated by play so as to explicitly establish that, unlike other games where pipes bend and curve, *Wario Land 4*'s pipes are straight.

ROOM 3



Two Marumens are placed in Wario's path, walking to the left of the screen. When Wario enters the room, they quickly close in on him. The two pipes are stalagmites which limit his ability to JUMP over and avoid the enemies. Wario is boxed in. Interaction with the purple pawns is an inevitability based on the timer of their walk. The player can either ATTACK, WALK into, or JUMP onto the Marumens. The game prefers the second option as indicated by the line of crystals in Wario's walking path. ATTACK hasn't yet been formally introduced, and the pipes make JUMPING awkward. The outcome of the preferred option is that Wario WALKS into the Marumens and knocks them back. Seeing first-hand through interaction that they can't hurt Wario, the player is likely to be more willing to experiment with them later in the

freer practice. Otherwise, if Wario ATTACKS or JUMPS on them, the player learns of spoils and the paralysed state.

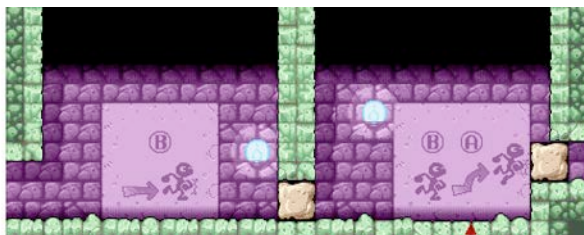
ROOM 4



Everything introduced so far is consolidated here in a freer form. Without the overhanging pipes, Wario can easily JUMP on the Marumen. The line of crystals further encourage the player, which makes it more likely that they'll realise that jumping on an enemy's weak point won't kill it, but flip it over into the paralysed state.

Red crystals and the jewel piece chests debut. These elements are self-explanatory. Wario only needs to touch them for the player to gather all they need to know.

ROOM 5



The sign shows the player how to ATTACK. The mechanic is taught in small steps. Firstly just ATTACK and then together with JUMP. The lock and key method is used, with the blocks as the locks and the mechanics as the keys. This approach continues throughout the rest of the level.

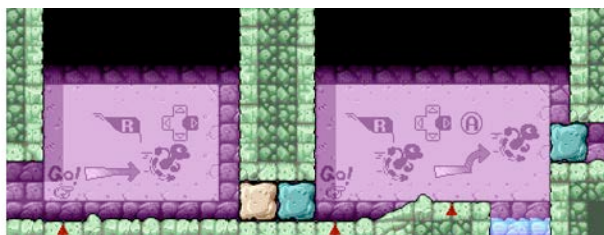
In the Hall of Hieroglyphs, more blocks drop small coins than usual so as to help foster a habit of frequent block breaking.

ROOM 6



Room 6 is identical to Room 4 bar the extra Marumén and two blocks. The uniformity of the two rooms draws the player's attention to the main inconsistency, the blocks. With the blocks on the player's mind, they're more likely to break them with the ATTACK mechanic they just learnt.

ROOM 7



Room 7 is similar to Room 5. The extra thick block stands out as an inconsistency to grab the player's attention. The regular and thick blocks aren't just placed together for contrast though. When next to one another, Wario can break through the two of them with the one DASH ATTACK, thereby informing the player that the mechanic breaks both kinds. If the player decides to break the regular block with an ATTACK and then DASH ATTACK through the thick one, that's still okay as they need to move Wario back a little before DASH ATTACKING, acknowledging the run-up. ATTACKING the first block sets the context for ATTACKING the second, and thus teaches the player that Wario can't break thick blocks with ATTACK.

The association between blocks and the attacking state (see Room 5) is another reason why the regular block is put first. The "go" signs and red arrows in the ground imply that a run-up is needed to charge the DASH ATTACK. If the player doesn't follow the visual markers, then Wario won't even be able to break the regular block. Based on the player's previous experience in Room 5, they'll know why, Wario's not in the attacking state.

The implication being that only once the DASH ATTACK is charged does Wario enter the attacking state.

ROOM 8



Another interim room. There isn't enough space from the entranceway to the first block to DASH ATTACK, so the player must ATTACK the first block to make room. After the player removes the first block, it's easier to keep breaking the other blocks as opposed to returning to the entrance and charging up a DASH ATTACK. Having cleared the path, Wario has the leeway to DASH ATTACK through the thick block at the end of the corridor. By manually clearing a runway block by block and then using the cleared space to DASH ATTACK, the player is subconsciously reminded of the mechanic's requisite run-up.

As the player only knows how to attack to the left and right, they have to experiment if they want to break the blocks stuck to the ceiling. Get it right and they'll realise that JUMP doubles as a vertical attack mechanic. The diamond hidden behind the right-hand block rewards the player's curiosity.

ROOM 9



Room 9 focuses on CHARGE THROWING (horizontal and vertical), the throwing trajectory, CLIMBING ladders, CROUCH WALKING, secrets, and heart medallions.

In the first section, the raised area in front of where Wario must CHARGE THROW from demonstrates that projectiles don't drag when thrown along the unit above the ground. Similarly, the gap before the pair of unit blocks shows how the ceiling doesn't create a drag either. Not only does the player learn how to CHARGE THROW horizontally (the sign), but the minor details related to the mechanic are covered too, all in one action.

In the second section, the block in the wall conceals a hidden area. A spare rock is left on the ground to encourage the player to use it to break the block. If they take the bait, they not only get to freely apply what they just learnt, but also learn that, no matter the size, all regular blocks can be broken by CHARGE THROWING a projectile at them. The heart medallion rewards the player's observation. Without the Spearmen to hurt Wario, the reward wouldn't be worthwhile as the player's had no chance of losing health so far.

Only an arrow is needed to teach the player how to CLIMB the ladder as the icon corresponds with the up arm of the d-pad. The rock is to the right of the ladder so as not to confuse the player.

In the third section, the sign shows that the trajectory of a vertical throw isn't directly upwards, but slanted forwards, in front of the thrower. The 2-unit-wide target forces the player, to some degree, to acknowledge this aspect of the throw mechanics.

Once up on the raised platform, there's no sign explaining how to get past the unit-high passage. It's not needed as it's highly likely that the player will WALK towards the passage to investigate, only to have Wario automatically CROUCH and enter. From there, it's just a matter of CROUCH WALKING through to the other side.

In the fourth section, the lock consists of two unit blocks. If there was just the one on the right, the player could ATTACK it to circumvent the arrangement. The bump in the ground, by being in front of the lock, informs the player that these kinds of graphical flourishes, which extend out from the floor, aren't solid. Because the unit blocks are in front of an entranceway, Wario invariably CHARGE THROWS the rock into the next room. Once he reaches the next room, the player won't be able to find the rock. The rules of room suspension are taught implicitly.

ROOM 10



Spearmen, enemies that can hurt Wario, are introduced. Considering that the player knows how to throw and has probably learnt how to paralyse enemies, at this stage, they should be able to put two and two together and use an enemy as a projectile to attack other enemies. The player has the freedom to realise this in Room 10.

ROOM 11

ROLL is introduced in the same fashion as the other mechanics before it. The through platform prevents backtracking. The Keyzer is placed in Wario's path so that he can't complete the level without it. There are two ROLL signs as in the second section, the player can't see the first sign. The key sign ensures that the player understands the purpose behind the Keyzer, although it's unnecessary given the later cutscene where the ghost unlocks the door to the subsequent stage. The second lock sits at the edge of the bounding box so that Wario ROLLS on into the neighbouring room, allowing the player can see how his state is maintained from room to room. More implicit room suspension.

ROOM 12



Room 12 introduces diamonds, floating hearts, Spearman variants, and the STOMP JUMP. Wario can STOMP JUMP off an enemy or use the jewel piece chest as a platform to reach the diamond. If the player opens the chest and

defeats the enemies first, Wario won't be able to claim the reward. The player is taught to look before they leap.

The first raised box prevents Wario from ROLLING on through the room. Together, the pair of raised boxes confine the enemies to a smaller space, making it easier and more opportune for the player to STOMP JUMP up to the diamond.

ROOM 13



The box in front of the regular block prevents Wario from clearing the block with an ATTACK. The platform to the left persuades the player to have Wario SMASH ATTACK from the position of the man in the sign, instead of just SMASH ATTACKING from on top of the block. The height reinforces the verticality of the attack and leaves the player with a deeper impression of the mechanic.

In the second section, the sign for the HEIGHTENED SMASH ATTACK can only be seen after CLIMBING the ladder. The placement cleverly informs the player of the mechanic's dependence on height. The diamond encourages the player to jump, not fall, off the ledge.

The observation test from Room 9 is iterated on with a less distinct visual marker.

ROOM 1

A return to Room 1 from the other side of the wall. This is the first time Wario enters a room by falling. The rock is to the left of the drop so that it's easy for the player to overlook. After Wario flicks the frog switch, the sense of panic is therefore heightened as the means to floss out the unit blocks isn't in immediate view.

At this time, the player can see the vortex open, reinforcing the frog switch/vortex relationship implied when Wario entered the stage. This is particularly important as after the Hall of Hieroglyphs, the two game elements never share the same screen again, so the player needs to make this connection themselves. "Exit" and an arrow pointing to the vortex fill the sign on the right-hand side.

The frog switch activates the frog blocks which trap Wario in Room 1. Further, after passing through the unit passage, the player can't CROUCH JUMP their way back to the left-hand side as the channel is 2 units above the ground. The post-fold timer is the first time the player's threatened with Wario's death. Death which would undo their progress and possibly turn them off the game by making them repeat the first level. The game can't afford the player to let Wario die so, to lessen the risk, the gameplay is highly directed through the aforementioned checks and measures.

EMERALD PASSAGE: PALM TREE PARADISE

LOWDOWN

Passage: Emerald Passage

Level Number: 1 of 4

Visual Theme: Tropical island

Game Idea: Continued tutorial, concealment, ATTACK/DASH ATTACK dichotomy

Key Level Elements: Blocks

Folding: Pure fold

Fold Measures: None

Enemies: Marumen, Spearmen, Harimen, Ringosuki

Number of Enemies: 12

Heart Medallion: Yes

Number of Floating Hearts: 4

INTRODUCTION

NB: The concealed areas aren't, as they appear in the reference, transparent in-game.

Light on game ideas and heavy on freer practice, Palm Tree Paradise is an extension of the Hall of Hieroglyphs's tutorial. The large serving of unrestricted gameplay allows the player to consolidate their knowledge of the mechanics and familiarise themselves with the level staples. The latter being the puzzle rooms, silver chest, and meatier post-fold, all of which were absent from the prior level.

The following characteristics define Palm Tree Paradise's light approach:

- » Few locks and keys (the player can just walk through the level)
- » Few new game elements
- » Simple, rectangular level geometry
- » A lack of hard punishments
- » Jewel piece chests are hard to miss
- » Simple game idea with slight variation

The context of a relaxing palm tree beach suits the design well, while the caves add a bit of variety to what could have otherwise been quite plain.

GAME IDEA

Pre-fold, the excess of blocks cluttering the level and the player's lack of familiarity with its layout make ATTACK relevant, as the safest and most functional way to clear a path. Post-fold, with the timer, few obstacles, mostly-cleared runways, and the familiarity of the level layout, DASH ATTACK becomes relevant, as the fastest means of reaching the vortex. This fold-based dichotomy helps the player understand the strengths, weaknesses, and potential applications of the two attack mechanics. It's also part of the extended tutorial which includes the introduction of transformations (Fat Wario), Ringosukis, Harimen, puzzle rooms, silver chests, concealment, and the post-fold sprint, along with the freer practice. Concealment, as in secret areas hidden behind visual obstructions, is used early in the game to encourage the player to be observant.

GAME IDEA TIMELINE

Extended Tutorial: Free practice – Purple pipes introduced – Silver chest introduced – Transformations and switch blocks introduced – Post-fold dash

Concealment Introduction: Introduction – Concealment in walls – Concealment and breakable terrain

ROOM-BY-ROOM ANALYSIS

ROOM 1



As with a few other levels, the first room separates the vortex from the main arrangements. Whether or not an empty room is necessary—so as to create anticipation, neat up gameplay, or provide an initial safety net—is debatable.

The lady singing in the background says “hello” shortly after Wario leaves the vortex, drawing the player’s attention to the music track. Given the lyrics and length of the track, the audio is quite impressive for the GBA hardware.

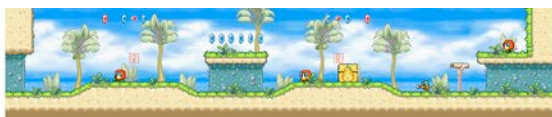
ROOM 2



Littered with blocks and void of locks and keys, Room 2 begins the warm-up with optional interactions. The blocks are arranged in a staircase formation to help Wario reach the red crystal. They also give him a height advantage over the Marumen.

The plants that grow out from the grass, like the stony bump in [Room 9 of the Hall of Hieroglyphs](#), create a layer in front of the foreground Wario stands on, complimenting the pseudo depth of the parallax scrolling.

ROOM 3



The ground dips and rises, more enemies are present, and the crystals are out of easy reach. By lowering and raising the ground and placing the crystals a little higher, there's an impetus to jump high and a variability to the height from which Wario can jump. The player is taught to be conscious of changes in the level topography and the limitations of the full JUMP, with the arrangements encouraging them to seek out alternative means of reaching the rewards. For example, to grab the crystals to the right of the grassy platform, Wario needs to either momentum jump off the ledge, STOMP JUMP off a Marumen, use the chest as a platform, or wait for the block outlines to become active.

With no switch block in sight, the two pink outline blocks are curiosity markers. The right-hand outline as a solid block post-fold makes it harder to avoid the jewel piece chest had Wario not opened it pre-fold.

ROOM 4



Similar to Room 3, but with hidden areas and thick blocks. The regular blocks in front of the thick block remind the player of the DASH ATTACK'S run-up.

Concealment debuts. There are three examples: the pathway above the thick block, the door hidden behind the pile of blocks, and the opening above the right-hand entranceway. With the wooden platform, mountain of blocks, and crystals as clues, the bar is set low. Most players are likely to discover at least one of the concealed areas, setting a precedence for their continual observation.

The player can avoid the lower stream of blocks and pass through the diamond channel by DASH ATTACK JUMPING or ATTACK JUMPING off the jewel piece chest. The wooden platform makes this route preferable post-fold.

Most players will probably only stumble upon the second entranceway post-fold as it's easier to reach from Room 5. In Room 4, Wario needs to stand right on the edge of the closest grassy flat and ATTACK JUMP in.

ROOM 4.5



The ladders look like steps, disobeying form fits function. Some players are likely to have Wario jump at the ladders and end up confused.



The lone Harimen is somewhat of an anomaly. There's little instruction embedded in the level design on how to defeat it, let alone the breathing room for experimentation. Considering the line of crystals in sight when Wario enters the room, the player's probably not going to be that interested in the Harimen anyway. The crystals lead the player to the first purple pipe. If Wario SMASH ATTACKS off the upper ledge, the Harimen will flip over in the top-left corner of the screen (above). In the end, the level design does teach the player how to beat the Harimen, but it's too late as the player's ready to leave the room. They're not going to backtrack just to beat the one enemy.

ROOM 5



I won't labour the point as it's petty commentary, but it sure is strange how the continuity works between rooms. The door to Room 4.5 leads Wario into a cave, which makes sense given the rock face surrounding the door. The entranceways to the cavernous Room 5 use the same surface. Sure. The logic breaks down when you consider that all entranceways are marked with the same gravelly rock. If rock faces were only used to mark the entrances to caves or if the faces at cave entrances were, say, darkened a little, there'd be greater continuity between the interior and exterior rooms.

The skull in the wall tips the player off to the concealed silver chest. It is the inconsistency in the visual pattern.

ROOM 6



The most complicated room in this amazingly simple level. Let's look at each part individually.

Transformations are introduced with the Ringosuki. The unit blocks on either side of the raised area need to be attacked or jumped over. Unless the player DASH ATTACKS, both leave Wario open to the Ringosuki's apples. The Marumen slow Wario down and keep him in the Ringosuki's range. The design pushes Wario to transform as Fat Wario not only moves slowly, making it more likely that the player will notice the out-of-place, breakable terrain below him, but can easily clear the terrain with a jump. SMASH ATTACK is also suffice.

The other reason for the unit blocks is that once Wario becomes Fat Wario, he must jump on them to leave the confined area. Doing so crushes the blocks, bringing this aspect of Fat Wario's jump to the player's attention and further increasing the likelihood that they'll respond to the awkward-looking terrain.

The gap in the floor leads to Room 6.5 where Wario can activate the green solid blocks which act as a platform to the purple pipe. Secrets lead to more secrets, and the switch blocks debut.

The pink switch block activates the crystal outlines and pink block staircase leading to the Keyzer. Smart players will remember the pink block outlines in Room 3 and may possibly backtrack to snag the rewards now made more easily accessible. The two sets of outlines are in the same room so the player can see that the switch blocks and outlines correspond to their respective colours.

ROOM 6.5



The first decent body of water for Wario to swim in. The crystals lead the player to the block which, given the lack of in-room means to break it, triggers them to experiment. The player needs to re-enter the room as Fat Wario and land on the block to clear it and claim the diamond. Despite the context of Room 6 acting as a guide, the bar is set pretty high. The arrangement draws attention to Fat Wario's limited walk and ability to crush blocks underwater. It also challenges the player to put their curiosity for interaction above any preconceived limitations and experiment.

The outlines form the platform needed to exit through the pipe so that it's impossible for Wario to return to Room 6 without the green solid blocks being activated. This safeguard not only helps the player later realise that the switch blocks are colour-dependent, but also ensures that, even if they can't get the diamond, they're still rewarded for their efforts with access to the purple pipe.

ROOM 7



The crystals remind the player to jump onto the frog switch. The heart medallion is a precaution against the player losing all of Wario's health in their first proper post-fold dash.

FOLD

For the player's first real go at the post-fold, the frog switch doesn't modify the level to subvert their expectations. Rather, the post-fold is defined by the blocks cleared, chests opened, outlines activated, enemies defeated, and shortcuts learned pre-fold.

With a relatively clear path through a mostly flat level and minimal animation-interrupting obstacles, DASH ATTACK is supremely useful post-fold. The short minute and a half timer persuades the player to take advantage of the mechanic. If they don't, then it'll probably take them at least a minute to reach the vortex. If they do, they can be out in 20 seconds. The large time difference affirms the use of DASH ATTACK post-fold to players that do use it, instilling this play behaviour early on.

EMERALD PASSAGE: WILDFLOWER FIELDS

LOWDOWN

Passage: Emerald Passage

Level Number: 2 of 4

Visual Theme: Field of flowers

Game Idea: Vertical movement

Key Level Elements: Currents, ceilings, raised ledges, narrow drops

Folding: Skirting along the fold

Fold Measures: Frog blocks, height

Enemies: Imomushis, Moguramen, Beezleys, Spearmen, Totsumen, Goggley-Blades, Ringosukis

Number of Enemies: 32

Heart Medallion: Yes

Number of Floating Hearts: 15

INTRODUCTION

Wildflower Fields is set in a flowery pasture leading to a giant sunflower which the player can climb from roots to bud. Having already completed a tutorial and introduction level, Wildflower Fields is the player's first attempt at a fully-featured level with the training wheels off. The difference is readily apparent: the rooms are larger and contain more enemies, while the arrangements build to a cohesive whole.

GAME IDEA

Wildflower Fields's arrangements are unified around the concept of vertical movement. They come in three forms: vertical ascent with Puffy Wario, vertical descent with Fat Wario and the HEIGHTENED SMASH ATTACK, and fighting against underwater currents (most of which push Wario vertically).

Without locks and keys to enforce participation, Puffy Wario is only an optional part of the game idea, despite the real estate its arrangements demand. With a bit of skill, it's possible for players to avoid the transformation altogether, by way of dodging the Beezleys. Rather than force the player, the arrangements employ a series of soft measures: three large rooms dedicated to the transformation; with enough Beezleys to cover the entire floor,

Imomushis along the ground which make it harder to avoid the Beezleys' sting, and curiosity markers that tempt the player to explore the upper floors.

HEIGHTENED SMASH ATTACK is implemented into gameplay through a mixture of compulsory and optional arrangements. The former (Rooms 3 and 9) establishes a grounds for SMASH ATTACKING down vertical drops, while the latter rewards the player for showing initiative and doing it on their own, outside of the mandatory arrangements. As the player encounters more and more of these ubiquitous, unnecessarily-long vertical drops, they become markers and, thus, prompts for SMASH ATTACKING. The two types of arrangements coerce the player to automatically SMASH ATTACK down every narrow vertical drop they meet. As we'll see, this behaviour is played on throughout the rest of the game.

Swimming against the currents is the most rigidly-enforced aspect of the game idea. It has the greatest proportion of mandatory arrangements. This is perhaps because the currents introduce swimming, prepping the player for the following level, Mystic Lake.

The three parts of the game idea are taught through a test-teach-test model of education where the player makes a mistake, learns from it, and can self-correct. The player can only see the area directly around Wario. Puffy Wario, the currents, and HEIGHTENED SMASH ATTACK control Wario's speed. Since the player doesn't control the speed at which the obstacles, junctions, and thick blocks (the information they need to make an informed decision) come into view, the arrangements put them in a position where they're likely to make mistakes. Furthermore, sometimes the player gets caught off guard by a Beezley, isn't in the right position to swim into a turn-off, or SMASH ATTACKS from the wrong ledge. By bringing more of the arrangement into view, the player can see where they failed. Whether it be the fall to the ground, currents which loop back around to the junction, or the ability to return to a high vantage point, the arrangements allow the player a retry.

GAME IDEA TIMELINE

Puffy Wario: Introduced with multiple floors acting as obstacles and tiers of rewards—Lower ceilings, more spikes, and Imomushis are added—A through platform adds a layer that stresses adaption and reaction skills, greater presence of spikes

HEIGHTENED SMASH ATTACK: Rooms 3 and 9 have mandatory arrangements. Optional arrangements are spread throughout the level.

Currents: Two mandatory arrangements mixed with an optional arrangement—Freer arrangement where Wario follows the lines of crystals

ROOM-BY-ROOM ANALYSIS

ROOM 1 AND 1.5





The first room sports an arrangement of Beezleys, spikes, flowers, vines, and layers of ceiling. Beezleys turn Wario into Puffy Wario. Spikes and ceilings return him to his regular self. The spikes also hurt Wario, removing a heart and making him recoil. When approached from above, the ceilings double as platforms. Flowers shield Wario from the Beezleys' swoops. The vines generate interest in the upper areas and forewarn the player of the ceilings so that they have enough time to manoeuvre Puffy Wario into or around them.

Depending on the player's intent, the game elements take on different meanings. The player either wants to progress and move Wario forwards (pre-fold: to the right of the screen, post-fold: to the left) or explore and let Wario travel upwards or downwards. The following comments are applicable to all three of the Beezley rooms.

Progression

Room 1 is orientated horizontally. Therefore to progress, Wario should move forwards along the horizontal axis. Since the Beezleys put Wario into a state where horizontal movement is limited, they're an impediment to progression. The flowers, which protect Wario from the Beezleys, help the player progress.

As Puffy Wario, the player needs to find the lowest ceiling so that they can return Wario to the neutral state without wasting too much time. The vines allude to the location of the lowest ceiling which makes them useful for progression. The ceilings are also aids as they help the player end the mishap with the Beezley. Although the spikes have the same function, they take health away from Wario and so remain a hazard regardless of the player's intent.

Exploration

Rewards are positioned above and below the ground floor, off the beaten track. Exploration therefore takes place along the vertical axis with Puffy Wario being the primary means of navigation.

Beezleys are initiators of exploration. The flowers are obstructions. The ceiling is the termination point of ascent, so it's both a necessity and an obstacle, depending on where the player wants Wario to land. The vines help the player distinguish between the ceiling and gaps and spikes. This makes them visual aids. (The vines never cover spikes).

In a side-scrolling platformer like *Wario Land 4*, game elements are defined by gravity. Platforms, for example, are devices which maintain a point of verticality. When the relationship between gravity and the avatar changes, so does the role of the game elements. The player must adapt to the change. When the player can control Wario's state of gravity, as is the case for Puffy Wario and many of the other transformations, they can create gameplay where they must constantly adapt and re-adapt to the fluidly changing state of game world.

Similarly, game elements take on different meanings depending on Wario's relative position¹. Enemies are a great example of this. When Wario's above an enemy, he has more power. When Wario's below an enemy, he has less power. Fiery Cavern explores this dynamic well with the Iwao. When the player can control Wario's relative position to objects in the game world, they can create gameplay where they must constantly adapt and re-adapt to the fluidly changing state of game world.



The platform is a way out of the transformation.

The platform is a platform.

The platform is an obstacle.

Because of the player's intent, Wario's changing state of gravity, and relative position to the platforms, the player must constantly adapt to the variable role of the platforms. In one instance, they think of platforms as obstacles. Shortly after, they determine Wario's landing point and see the platform above as a way out of the transformation and the platform below as a regular platform.

The Puffy Wario and platform arrangements are an example of the two dynamics combined. Depending on Wario's relative position and state

¹ As an aside, the gravity and relative position dynamics are interdependent as gravity determines the nature of movement in space.

of gravity, the role of the platforms change and the player must adapt accordingly. When underneath the platforms, they act as obstacles that Puffy Wario must float around. Once the player moves Puffy Wario past the platforms to an area they wish to land, they're platforms, while the second lot of platforms overhead are ceilings. The player must then plan ahead for Puffy Wario's return to the neutral state. That is, determine where he must hit the ceiling so as to land on a platform. In sending Wario up to the canopy of the room, the player adapts to the changing state of the platforms three times, with the last two changes interlinked (Puffy Wario can only land after touching the ceiling).

In Room 1, the lock to Room 1.5, the room directly above, is height. Puffy Wario is the key. The challenge and engagement comes from managing the various properties of the transformation so that Wario can ascend the floors. The fixed speed of Puffy Wario's ascent gives the player a set time limit to bring him into vertical alignment with the gaps in the ceiling. The large size of Wario's inflatable head demands precise movement, while the oversteer of the blimp works to undermine the player.

The rewards are arranged in a hierarchy with the biggest bounty (CD) at the top and the small fish (floating heart) at the bottom. The more effort put in, the greater the reward. The benefit of getting the CD is twofold as, by virtue of reaching the top, Wario can bag the other rewards on the way down, saving a good deal of time.

Returning to Room 1 after claiming the CD is treacherous as the player doesn't have much visible vertical leeway and therefore can't see where Wario will fall. To address this issue, crystals act as handrails and the area directly under each ledge is free of spikes.

Wario can access the first floor of Room 2 from Room 1 and spot the crystal. This acts as a curiosity marker.

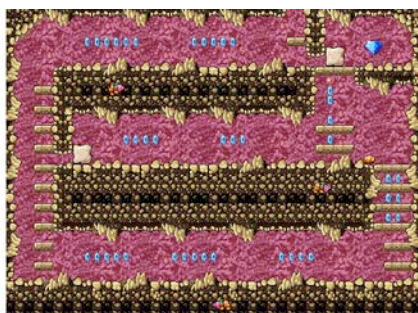
ROOM 2



The ceiling sits a little lower and is a bit more cavernous, so exploring the upper area is riskier and requires more reflex skills to steer Puffy Wario clear of the wider coverage of spikes. Like the unit blocks in [Room 6 of Palm Tree Paradise](#), the Imomushis get Wario off the ground so as to make him more vulnerable to the Beezleys' attacks. Although the flowers shield Wario, a short jump over an Imomushi lifts him above the shelter. The caterpillar-like enemies also make it harder for Wario to DASH ATTACK through the room by interrupting his charging animation.

The raised platform and thick block arrangement weaves the HEIGHTENED SMASH ATTACK in with the Puffy Wario arrangements.

ROOM 2.5



When Wario enters the room, the block (lock) draws the player's attention to the diamond (reward) which has them follow the bend around to the rock (key). This setup provides the perfect excuse for the game designers to introduce the Moguramen. The crystals get Wario high enough off the ground to avoid the enemies' projectile attacks. Therefore, when the player confronts the projectiles without the crystals, they'll already know, or at least have the context to realise, how to dodge them. The arrangement also makes the player more wary of the hazards. The Moguramen's cool down animation after they enter screen view or drill up two projectiles gives the player an opportunity to safely pass, granted they follow the enemy's attack patterns (knowledge). The player must experiment to discover that SMASH ATTACKING the ground brings the Moguramen up to the floor. The level design does little to assist the player in realising this point.

ROOM 3



The pipe allows the player to see for themselves that the only available entrance to Room 4 is through the gap in the floor occupied by the thick block. This discovery sparks the motivation for them to return to and solve Room 3's arrangement. The multi-room setup is an example of test-teach-test. The line of crystals and floating heart reinforce the HEIGHTENED SMASH ATTACK in the player's mind through the positive psychology of rewards. This aspect of the game idea is established.

The Spearman add a timing element to the platforming as the player must wait until they're away from the edge before getting Wario to jump. The top platform is high enough that the player can catch a glimpse of the Keyzer, prompting them forward once again with curiosity.

ROOM 4



Room 4 continues to encourage the player to HEIGHTENED SMASH ATTACK, but is much more subtle. With limited visual leeway, players may wish to slowly rappel down the long vertical drop by jumping away from and landing back onto the platforms. Repeating this process until Wario reaches the bottom wastes a lot of time and is a bit ridiculous. Impatience and

overwhelm the player. Swimming introduces a set of new mechanics, new underwater enemies, and involves moving along two axes, so it's best to start off simple.



As the added frog blocks demonstrate, the channel is 3 units tall. Wario and the Goggley-Blade are each 1 unit and 2 pixels tall. Their hit boxes are 1 unit tall. Both characters can easily become displaced and swim a few pixels out from the edge of the channel. Taking into account the two pixels of visual trimming around their hit boxes, it doesn't take long before both characters occupy half of the channel, 1.5 units each. Therefore, at any one time, Wario has a fifty percent chance of being in the enemy's range. Not bad for the first dip into water.

This image is four times its original size for clarity.

What stands out to me is the Goggley-Blade. The first time the player has an opportunity to play around in the water and Wario's dropped in a narrow channel with an aggressive enemy that can charge at him. The passage is 3 units tall. Wario and the Goggley-Blade are each 1 unit tall. Because it's easy for the enemy to become displaced, natural for the player not to swim neatly within the vertical height of a unit, and the two bodies extend a couple of pixels out from their unit-tall hit boxes, Wario and the Goggley-Blade tend to fill 1.5 units of height each. As the channel is so narrow, the fish primarily patrols the horizontal axis. Therefore, with the Goggley-Blade either at the top or bottom half of the channel, at any one time, Wario has about a 50-percent chance of being in danger.

The first two openings are part of a looping channel. A chain of crystals at the entrance lures the player into the rip. Without prior knowledge of the layout, the player will likely miss the turn-off on their first attempt and be swept back around. The channel employs a test-teach-test approach to tutorial. Players have a go, make a mistake, learn from it, and self-correct. The crystals at the junction help the player identify the way out.

At the top-left, TTT is used again, however, this time the currents loops until Wario breaks out. Crystals at the junction lure the player up to the ledge, while a second set prompts them to jump off it. Wario's float makes it easy to rise out of the currents which explains why the arrangements have him move from the bottom to the top of the room.

Once again, HEIGHTENED SMASH ATTACKING down the long vertical drop rewards the player. Those who don't catch on settle for the crystals without

realising that they missed out on the diamond. *Wario Land 4* highlights the player's achievements, not their failures. The arrangement draws attention to how Wario can HEIGHTENED SMASH ATTACK through water.

The right-hand route leads to the room's exit. The crystals encourage SLOW SWIMMING against the currents.

The jewel piece chest sits in screen view as Wario leaves the water, so the player won't overlook it. The slope returns Wario to the start. The narrowness of the channel ensures that he can't miss the crystals. The arrangement is a priority test. Which does the player value more: coinage or time and energy?

ROOM 6



A wider iteration of the final arrangement in Room 5. Because of the added width to the room, the crystals are spread further apart and require the player to act earlier to reach them. Reflex skills are heightened.

ROOM 7



The sunflower head and door carved out of the stem reveal that over the past three rooms, Wario's been climbing the sunflower from roots to flowerhead. In Room 3, the bushes are replaced with sunflowers and two of the stalk's leaves act as platforms. Room 4 is set underground with a giant root surrounded by smaller roots in the background. Room 5 is the base of the plant. Room 6 is the stalk, which narrows as it reaches the flowerhead and has leaves sprouting out from the sides.

The caterpillar-esque Imomushis placed along the chewed-up leaf platforms make for an organic blend of context and level design. Being knocked off a platform because an Imomushi is just going about its business has a coincidental charm to it. The jewel piece chest is on the left, just before the exit, so that the player can't miss it. The heart medallion is on the right for the opposite reason. Out of sight, out of mind. If the player can reach the right-most platforms, they'll bring the diamond into view, planting the seed for its collection from Room 8.

Wario can throw the Imomushis at the sunflower's head, knocking off florets which drop gold coins. Five throws later, all the florets are gone and the player's nabbed 2500 in coin units.

ROOM 8



Wario passes through Room 3's top floor first.

Room 8 continues the Puffy Wario arrangements with some minor variation to increase the difficulty. There's no vines, more spikes, and an added through platform populated with Totsumen. The Totsumen walk back and forth and charge at Wario, so when Puffy Wario takes flight, the player must monitor, react, and adapt to their variable behaviour (knowledge, adaption). Removing the vines, which forewarn of the spikes, limits the player's reaction time (reflex). With only a floating heart as a reward, the imperative to explore is weakened in preparation for mad dash post-fold.

Players that recall the diamond at the top of Room 7 can use the left-most Beezley to claim it. The red crystals draw the player's attention to the route upwards.

ROOM 9



This last room before the fold returns to the HEIGHTENED SMASH ATTACK part of the game idea by showing the player that the mechanic is equivalent to Fat Wario's jump. The Ringosukis add a timing aspect to CLIMBING the ladder as only when they're cooling off between apple throws can Wario safely CLIMB past. Alternatively, the player can remove the Ringosukis for a clear passage. The vines obscure the top-most Ringosuki. The freer practice allows the player to choose how they break the thick block and deal with the enemies.

There's a thick block hidden in the bottom-right corner. Observant players are again rewarded for breaking the ground below Wario. By the time Fat Wario reaches the pipe, the player will have walked off his weight.

FOLD

Where in the Hall of the Hieroglyphs, the frog blocks prevent unintended backtracking, in Wildflower Fields, they also chart a new course back to the vortex. Wario bypasses the sunflower rooms and is redirected along the previously-inaccessible top floor of the first three rooms. The curiosity fostered in the pre-fold is realised in the post-fold.

The lens flare in the background swelters to indicate that the temperature has risen and the pressure's on.

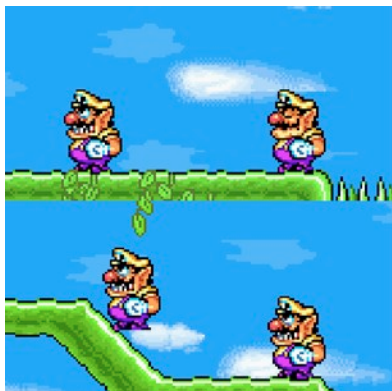
ROOM 8

Entering from Room 9, Wario needs to move from right to left. The gap next to the through platform is on the right, so the further Wario is to the left, the longer it'll take him to backtrack if stung by a Beezley. Progress is directly proportional to potential soft punishment.

ROOM 3

With the frog blocks turned to outlines, Wario can pass. The Keyzer's right in Wario's path so that the player won't have to repeat the level.

ROOM 2



The slope interrupts Wario's jump about 4/5ths of the way through, cutting short his horizontal displacement. The taller the slope, the sooner the jump ends, and the more effective it is at slowing him down. Because slopes create more surface area, they also slow Wario down if he walks along the ground. In both regards, slopes double as speed humps.

The slopes slow horizontal movement from the right, maximising the tension of the timer. The floating hearts present a trade-off between time and health (risk/reward). Wario can lure the Totsumen into the spikes, although they have no effect on the enemy (which is strange given that water, fire, and other hazards destroy them).

If Wario SMASH ATTACKS through the browned floor, he can fly up through the gap to Room 2.6 as Puffy Wario. It's easy to overlook the visual marker given that the timer and slopes persuade the player to rush past. The vines guide the player through the hole.

ROOM 2.6



The most difficult navigational challenge in the level because the ceilings are so close together. The player must move Wario in the right direction as soon as the ceilings come into view and continue the sharp turn until he's clear.

EMERALD PASSAGE: MYSTIC LAKE

LOWDOWN

Passage: Emerald Passage

Level Number: 3 of 4

Visual Theme: Lakes, underwater caves, forests

Game Idea: Underwater adventuring

Key Level Elements: Water, bubbles, holes in cave wall

Folding: Reroute

Fold Measures: Frog blocks

Enemies: Shieragutchi, Utsuboankos, Spearmen, Marumen, Hay Balls, Goggley-Blades, Menhammer, Togenobi, Ringosukis

Number of Enemies: 36

Heart Medallion: Yes

Number of Floating Hearts: 13

INTRODUCTION

Mystic Lake is a lake with an island in the middle. Wario enters from the left of the island and swims underneath through a series of caves to resurface on the other side, heading back to the vortex on foot post-fold. Taking what was introduced in Wildflower Fields and expanding on it, swimming is the primary game idea. The current-driven controlled practice is replaced with larger pools of water populated by enemies that test the player's use of Wario's swim mechanics and resistance against buoyancy, among other relevant skills. Post-fold, the game idea shifts to a straight dash to the finish, similar to Palm Tree Paradise. Revision is mixed in with the new material.

Mystic Lake is memorable because it feels like it could be a real place. The smooth transition from lake to caves to island, the enemies as fauna, and the lack of blocks develop a sense of the nature.

GAME IDEA

The player is an aquatic adventurer in Mystic Lake as their exploits see them explore underwater caves, navigate tricky terrain, and observe the environment (breakable terrain, cracks of air, holes in cave walls) and local marine life (enemies). Each arrangement addresses a particular aspect

of underwater navigation, whether it be the swim mechanics, underwater enemies, buoyancy, or Bubble Wario.

The post-fold dash is the secondary game idea.

GAME IDEA TIMELINE

Swimming: Goggles-Blades introduced, focus on free swimming – Shieragutchis introduced, focus on FORWARD STROKE and avoiding underwater enemies in a narrow space – Utsuboankos introduced, focus on UPWARD STROKE–Bubble Wario introduced, focus on SLOW SWIM – Togenobi introduced, swim mechanics tested

Post-fold Dash: Relatively free passage – Hay Balls as obstructions

ROOM-BY-ROOM ANALYSIS

ROOM 1



Room 1 is separated from the action.

ROOM 2



Entering Room 2, the crystals, which are part of the post-fold level design, are within a jump's reach. Their pull persuades the player to have Wario jump off the platform and, quite likely, land in the water below. When Wario hits the

water, the camera positions him in the centre of the screen, above the vertical midpoint (Wario's default vertical position). There are three bounding boxes near the water: one from the leafy grass up, one from the bottom of the leafy grass platform down, and one covering the height of the leafy grass platform, 2 units tall. It's the latter most bounding box that holds Wario in the centre, with the top half of the screen above ground and the bottom half underwater. This viewpoint brings the crystals into frame to lure the player downward.



In almost all video games which use them, floating rewards (coins, crystals, rings etc.) direct the player to the next waypoint. Having relied on these devices to guide us many times before, we've become conditioned to trust them, even though they narrow our vision of the game world and sometimes use this effect to deceive us, as is the case in this arrangement. The sets of crystals in the air and underwater, in conjunction with the camera, lead the player to overlook the throwing arrangement.

On land, there's a lone Spearman on the left and a row of unit blocks on the right, leading to Room 2.5. Experimentation confirms that the protruding root is a platform. The player needs to transport the key to the lock and then open the door. Prematurely defeating the Spearman denies access to Room 2.5. By baiting the player with crystals and separating the lock from the key, Room 2 teaches the player to choose caution over impulse.

There's plenty of room underwater to contend with the Goggley-Blade.

ROOM 2.5



The only way to get the two pieces of the puzzle (the rock and block) to meet is to throw the rock above the barrier so that it lands on the block. This will break the block and let Wario through. By denying direct access to the block, the player needs to formulate a workaround. Experimentation leads to self-teaching.

ROOM 3



With organic cave layouts (as opposed to rectangular boxes), the removal of currents, and gradual expansion of underwater areas, Mystic Lake's swimming arrangements start where Wildflower Fields's restricted practice left off. Room 3 is still fairly confined though and crystals are used heavily as direction markers so as to not overwhelm the player with their new-found underwater freedom. The narrowness of the cavern forces the player to confront the Shieragutchis and Goggley-Blades and learn their movement patterns (reflex and knowledge). The horizontal shape of the room puts the focus on the FORWARD STROKE.

Room 3 is unnecessarily difficult as the Shieragutchis and Goggley-Blades are too close. This makes it harder for the player to deal with them individually. Safely passing through Room 3's treacherous waters therefore involves adapting to the movement and relative position of the two enemies, dealing with Wario's float, and moving him at the same time. The player can scale the task by having Wario swim along the ceiling where he can't float any higher and the Shieragutchis can't bite him. The arrangements are both puzzles (simplifying the complexity) and tests of execution (swimming through safely), where the former makes the latter easier.

Instead of overwhelming the player, it would be better to introduce the Goggley-Blades and Shieragutchis individually before pairing them together.

The crystals draw the player's attention to the lightened patch of cavern wall. Wario can only UPWARD STROKE into the terrain. There's no other way to interact with it. Without prior knowledge of breakable terrain, this might seem ridiculous, but, alas, experimentation leads to reward. As with many of *Wario Land 4*'s secrets, this one has two layers. After breaking through to the upper pool and claiming the diamond, Wario can HEIGHTENED SMASH ATTACK down the vertical channel to clear the blocks and reach the puzzle room. The SMASH-ATTACK-down-a-narrow-drop behaviour from Wildflower Fields is

now a regular part of the arrangements. To get this far, the player first needs to notice:

- » The block
- » The crystals above it
- » The lightened terrain
- » The vertical drop

And with each game element, note the interactions:

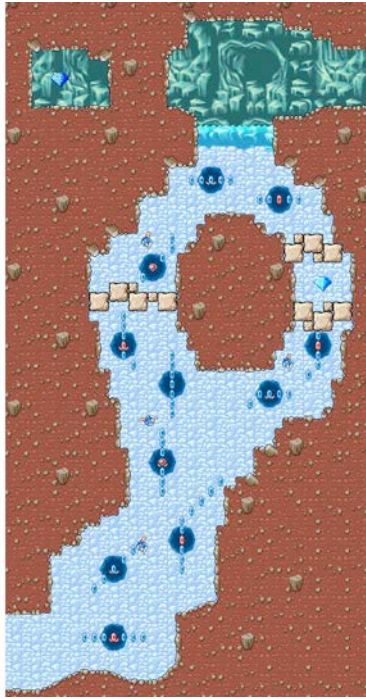
- » The block—*“This block can be broken”*
- » The crystals—*“There must be an area above to SMASH ATTACK from”*
- » The lightened terrain—*“I can interact with this”*
- » The vertical drop—*“This is the path to the crystals and block that I need to break”*

The opaqueness of the arrangement makes it a suitable example of what I discussed in [Through the Lens of Interaction + Association + Cognition and Application](#). Since the solution isn’t immediately apparent, the player needs to use their association skills to deduce potential interactions.

The arrangement also teaches the player that Wario can HEIGHTENED SMASH ATTACK through water.

The crystals at the end of the tunnel and the Goggley-Blade they lead to distract the player from the jewel piece chest.

ROOM 4



The verticality of Room 4 shifts the focus to Wario's buoyancy and the UPWARD STROKE. In Room 3, Wario's float makes it easy to avoid the Shieragutchis. In Room 4, as the orientation of the room is identical to the direction of the float, Wario is pulled towards enemies and obstacles. The player must therefore be more wary of the upward drift when Wario's stationary. The level design accentuates the game dynamic so as to add an extra wrinkle to the game idea.

Buoyancy in a vertical room renders the Shieragutchi redundant as the player can avoid them without even pushing a button. They're replaced with Utsuboankos. These eel-like enemies hide in the holes of the cavern walls and jump out to bite Wario as he swims past. Since only a few of the holes are occupied and the player can determine whether a Utsuboanko's present by the glowing eyes in each hole, the player is encouraged to be observant. The eels also persuade the player to UPWARD STROKE as Wario can't avoid their bite by floating or SLOW SWIMMING past their holes, and the FORWARD STROKE isn't needed so much in the vertical room. Crystals are placed in front of the holes to facilitate risk/reward. On hard, Utsuboankos

occupy every hole. This makes the arrangements further challenging, albeit more predictable.

Because the Utsuboanko live in these little caves, the rock face background is necessary to make visual sense.

The sound of Utsuboankos bursting out of their holes blocks out the sound of Wario's swimming. It appears that one sound effect mutes the other or the hardware isn't capable of playing the two sounds through the same channel at the same time.

Blocks are locks and the UPWARD STOKE is the key. What was optional in the prior room is mandatory now. The diamond is on the right as taking the right-hand path is more challenging than the left. Not only is it further from the entrance, but the Goggley-Blade patrols the area around the blocks.

The wall next to the top-left ledge is made of thick breakable terrain. It can only be broken by DASH ATTACK JUMPING over the pool of water. The unnecessary presence of the ledge, lack of stone outline, and visible space on the other side of the wall tip the player off.

ROOM 5



Room 5 sidesteps the game idea to introduce Bouncy Wario. The similarities with Room 3's lightened terrain arrangement make the room feel familiar, prompting the player to interact with the new tools, the Menhammer. With the means and motivation in check, the measures are in place for the player to teach themselves the Bouncy Wario transformation.

The Marumen are just placeholder enemies. On hard, they're swapped out for a jewel piece chest. Why not just reward the player with a diamond?

The floor is marked with ridges and depressions. Since Wario and the Menhammer move to attack and avoid each other, they cross the floor, exchanging positions between the raised flats and the lower ground. The

former provides a slight height advantage (while the latter provides a slight disadvantage), and thus allows power to dynamically shift between the combatants, forcing the player to constantly adapt to the changing roles.

ROOM 6



On either side of the core arrangement of bubbles and Utsuboankos are larger pools of water with little to direct the player. As we can see, the body of water in each room increases as the level transitions into freer practice. With a focus on SLOW SWIM, Room 6 isn't bound by the horizontal or vertical impositions of the FORWARD and UPWARD STROKES.

At the base of each channel, the new level element, the cracks of air, spawn bubbles which float upwards in a wave-like formation. If Wario touches a bubble, he'll become trapped within it and sent floating to the ceiling where it'll pop on impact. On the way up, he'll glide past a through platform. After Wario's freed, he must take the upper route with the Utsuboankos as the through platform blocks the path back. Unlike *Wario Land: Shake Dimension*, which locks content from the player if they fail, the player's free to return to the bottom route. They'll want to tackle it too as it's not only shorter, but punctuated by a line of crystals. With Wario above the bubbles though, the player has limited visual leeway, and therefore limited reaction time. It takes nimble reflexes and keen timing skills to dance with the bubbles. Because of the narrowness of the passage and size of the bubbles, which fill up 2/3 of the channel, SLOW SWIM is needed to navigate the delicate arrangement.

FORWARD and UPWARD STROKE are too fast and have Wario bounce back off the walls, making them unworkable in the confined space. The arrangement tests the player on the SLOW SWIM mechanic and all of the DKART skills, bar adaption:

- » Dexterity–Controlling the SLOW SWIM
- » Knowledge–Tracking the bubbles, noticing and memorising the patterns
- » Reflex–The limited visual leeway
- » Timing–The bubbles spawn and sway to a timer, the player needs to feel out that pattern to avoid them

If the player fails the lower arrangement (avoiding bubbles), they must complete the upper arrangement (a condensed version of Room 4's Utsuboanko challenges). The punishment for failing the new content is a review of the old content.

The first channel only has two Utsuboanko holes, while the subsequent channels have three. By the third passage, the player's not only been conditioned to favour the lower route, but they're more proficient at avoiding the bubbles. It's here where getting caught by a bubble leads Wario to a secret diamond. The player's trained behaviour is subverted.

The crystals at the end get Wario to swim in a path.

ROOM 7



The purple pipe's location is somewhat awkward. It would have been better placed at the top of Room 5. It does, however, nicely complement the camera by luring the player over to cross into the bounding box which then leads to the frog switch. The current is the lock and the frog switch is the key.

THE FOLD

Moving towards the frog switch, the Keyzer on the other side of the wall comes into view. As the switch is pressed, the mouth letting the water in behind the Keyzer closes, suggesting some change to the water flow. With the location of the Keyzer revealed and the water modified, the seeds are planted for the player to investigate. Even if they didn't notice the currents before they flicked the switch, there's enough clues surrounding the frog switch to prompt them downwards.

The frog switch disables all water currents and activates the frog blocks, allowing the player to claim the Keyzer and return to the vortex via the route through the jungle. The frog blocks in Rooms 6 and 7 prevent Wario from swimming back under the island.

ROOM 7

With the currents turned off, Wario can now access the Keyzer. The Togenobi, which couldn't be seen pre-fold, is news to the player. The shelled "*quadpus*" is the peak of the swimming game idea, calling on the mechanics and skills covered pre-fold. Here are a few points of interest:

- » There are two aspects to the Togenobi's movement pattern: the rotation and extension/retraction of its flail legs. Swimming past requires that the player monitor the two independent variables (double the knowledge skills of a regular enemy).
- » The sophisticated movement of the legs and the threat of their flails elicits careful swimming with SLOW SWIM. The timer suggests otherwise. The player is free to scale the difficulty as they wish.
- » Because the legs are always in motion, Wario can never be stationary for too long, and so the player needs to constantly exert a little dexterity and reflex skills.
- » With the threat above Wario, the player must contend with his float as they make their way around.
- » The crystals create risk/reward, similar to the Utsuboanko arrangements.
- » The rotation and extension/retraction of the legs operate on a timer (timing).
- » The player has to navigate around the Togenobi within a limited time frame, so stress is placed on all skills.
- » By swimming close to the centre of the Togenobi, Wario can bypass the legs completely.

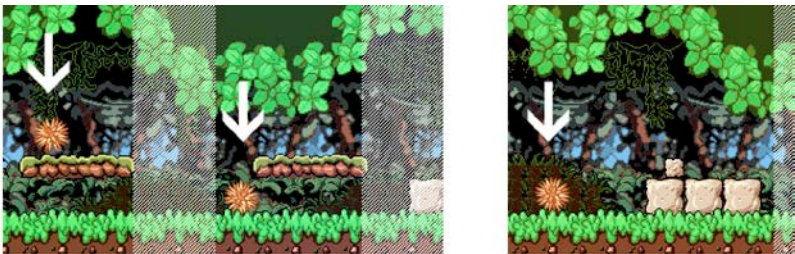
ROOM 6

The frog blocks form a bridge over the water. The Ringosuki tries to slow Wario down. The crystals above the enemy persuade the player to move Wario into the path of its airborne apples.

ROOM 8



This long room is full of blocks, falling Hay Balls, and various platforms. When Wario enters a given area, a Hay Ball falls from the ceiling. So long as Wario remains in that area, once the active Hay Ball is destroyed, another will spawn, and so on. The balls spawn relatively close to the point on the horizontal axis that prompts their spawning, giving the player limited reaction time to avoid the hazards. The image below visually represents this phenomena. The lined area is where Wario stands and the arrows are where the Hay Balls spawn. On hard, additional balls spawn just before Wario reaches the slopes.



The quickest way to clear the room and avoid the Hay Balls is to ROLL down one of the slopes. When rolling, not only does Wario move quickly, but he's also impervious to Hay Balls. The trade-off is that the fast speed translates to greater stress on reflex skills, if the player is to ROLL JUMP from platform to platform and claim the jewel piece from the chest. If they don't have the reflex skills, then they'll probably ROLL into Room 2 and have to return to Room 8 to grab the jewel piece. The potential backtracking balances out the benefit of the ROLL's faster movement speed.

Alas, most players likely won't even realise that Wario *can* ROLL, given the grass graphic conceals the diagonal slant of the slopes. Furthermore, the blocks steal the player's attention away from the slopes. To some extent, the context of breaking the blocks persuades the player to use the same attack mechanic to exit the room. The graphic and level design obscures and misdirects the player, which is problematic given the effectiveness of the Hay Balls and the chaos created by the time constraint.

ROOM 2

The thick block is present as a short-term memory exercise lasting the entire level. Even if the player didn't remember it from the pre-fold, there's little loss in going back and building up a ROLL or DASH ATTACK. A silver chest is behind the thick block, in its own separate room.

EMERALD PASSAGE: MONSOON JUNGLE

LOWDOWN

Passage: Emerald Passage

Level Number: 4 of 4

Visual Theme: A jungle taking monsoonal rainfall

Game Idea: Swinging from tree to tree

Key Level Elements: Swinging platforms, water, blocks

Folding: Pure fold/reroute

Fold Measures: Frog blocks, height

Enemies: Tobawanis, Totsumen, Harimen, Harimenzetto, Ringosukis, Bow Balloons, Menhammer, Spearman

Number of Enemies: 28

Heart Medallion: Yes

Number of Floating Hearts: 10

INTRODUCTION

Emerald Passage's water theme has gone from a beach to narrow aqueducts run on currents, an expansive lake, and now a dank jungle with torrential rainfall. Swinging between the trees of this jungle is the level's game idea. Although there's a lack of hard punishments, the restrictive design of the swinging platform arrangements make Monsoon Jungle the most rigid level in the passage.

GAME IDEA

Swinging amongst the trees is Monsoon Jungle's core game idea. There's no swing mechanic though, instead, Wario jumps between platforms attached to vines which sway back and forth in the treetops. Although the game idea is well-established early, its growth stagnates over the course of the level. The arrangements peak in Room 2, are sidelined to Fat and Puffy Wario in Room 3, extended in Rooms 4 and 5, and return under the post-fold timer in Room 1.

Puffy Wario and ploughing down hills with ROLL or DASH ATTACK are minor game ideas.

GAME IDEA TIMELINE

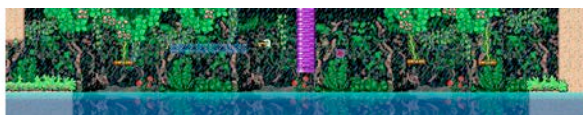
Swinging platforms: Wario is dropped into water, soft punishment established – Three arrangements where platforms are spread further apart and sway at different speeds – Platforms are part of a staircase arrangement – Suspended above Harimen – More of the same – Jumping tested under the post-fold timer

Puffy Wario: Reviewed in a large room – An optional navigation task to reach a secret room

Rolling Hills: Blocks put in Wario's path – Blocks replaced with crystals

ROOM-BY-ROOM ANALYSIS

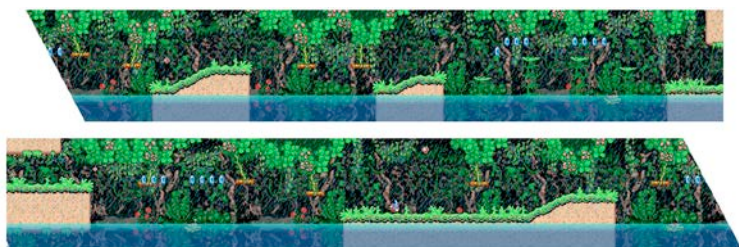
ROOM 1



In most of the swinging platform arrangements, backtracking through water is a soft punishment. When entering Monsoon Jungle, Wario falls from the vortex into water. Wario starts out in the drink so as to draw attention to his slow swimming speed and set a precedence for the punishment. This way, when the player reaches Room 2, they'll be more willing to comply with the arrangements. For the time being, the two swinging platform arrangements are irrelevant.

The purple pipe acts as a wall between the Keyzer and vortex so that Wario must navigate both swinging platforms arrangements post-fold, instead of grabbing the Keyzer and entering the vortex in the one jump. Using a puzzle room pipe though is a bit of an odd choice. Aren't they meant to be secrets?

ROOM 2



Several sets of swinging platforms are suspended above water and divided by islands. The right side of each island is higher than the left so that if Wario

misses a platform and falls in the water, he can't JUMP out high enough to reach the subsequent island and must retry the arrangement.

Like Room 8 of Wildflower Fields, the arrangements have a unique spatial dynamic where progress is directly proportional to potential backtracking. So, the further Wario gets, the more is at stake, and the greater the tension. It's ironic then that the last jump is also the easiest, as the island is stationary. Since paddling through the water is slower than ATTACKING or DASH ATTACKING on land, the water exacerbates the backtracking.

Because the swinging platforms are constantly in motion, moving in and out of range of the neighbouring platforms, they add a timing factor to the jumps. The player must judge how long it will take two platforms to be close enough for Wario to safely jump between them and then wait for that time to elapse before jumping. Timing the jump between two swinging platforms is more difficult than between a swinging and stationary platform. For the latter, the swinging platform moves in close to the stationary platform at a fixed rate. This consistency makes the timing easy to follow. The former, two swinging platforms, sway independently of each other, so the time in which they're close together is inconsistent. With no pattern to follow, the player has three options:

- » They can use the distance at which the platforms were apart on the previous swing and the time it takes the platform Wario's on to swing back to predict the subsequent swing.
- » They can over jump and bank on the second platform swinging into range as Wario's in mid-air, subtly nudging him in the right direction.
- » They can react as they see the platforms coming together on-screen. There's still a timing element involved as the player visualises the two platforms meeting in future time.

No matter the approach, the inconsistency makes it more difficult to judge the timing. The different vine lengths for each of the platforms affects their swinging arc and speed. The minor variation from one platform to another requires the player adapt their jump to each set. The modest size of the platforms stresses timing and adaption skills.

The crocodile-like Tobawanis jump out of the water in a straight line when Wario's vertically aligned with them. They interrupt the platforming process by forcing the player to dodge, throwing off their timing. The player must keep the enemy's relative position in the back of their mind while platforming or risk being caught off guard. With the arrangements already demanding a fair chunk of concentration, the Tobawanis only increase the level of engagement. Since Wario must cross the Tobawanis at least once each

set of platforms and the crocodiles turn around and swim in the opposite direction on touching a wall, they remain relevant at all times.

After landing back in the water, Tobawanis quickly swim forward so that they don't trap the player in the one spot.

So long as a Tobawani is facing Wario, when he falls in the water, they'll swim towards him. The crocodile's behaviour changes depending on Wario's location—the player must adapt accordingly. After a Tobawani bites Wario, the lost spoils quickly fall off-screen. It's almost inevitable that the player won't be able to reclaim their spoils in time. This minor detail strengthens the threat of the enemy.

The crystals persuade the player to jump in particular ways, adding an optional layer of difficulty.

Each group of platforms is more challenging than the last. The arrangements begin with stationary platforms, transition to swinging platforms, add Tobawanis, and then spreads the swinging platforms further apart.

In the last set, Wario can swim underneath the island to a secret room. As he couldn't do this with the other islands, the player's expectations are subverted.

ROOM 3



The swinging platform arrangements continue, but take a backseat to the Ringosukis and Bow Balloons in this freer practice room. The Bow Balloons debut. They're identical to Beezleys, but fire arrows horizontally instead of swooping vertically.

When Wario's in range, the two enemies use their projectile attacks. The Bow Balloons shoot arrows in a straight, horizontal line. The player needs to determine whether Wario will vertically align with the arrow, given his current movement, the speed of the arrow, and the time it'll take to reach his

position. The Ringosukis throw their apples outwards at an angle. The player needs to determine whether the apple will reach Wario (when he's aligned horizontally) or land on him (when the Ringosuki is above). In clearing Room 3, Wario will inevitably fall into range of these enemies. Touching one of their projectiles can undo or aid the player's progress, so along with everything else mentioned, the player must consider whether or not it's in their interest to touch the projectiles.

Most of the Ringosukis and Bow Balloons sit on the platforms, roadblocking Wario's progress. The player needs to wait for them to move away from the nearest edge before Wario can jump to the platform they occupy. Given that the enemies can fire projectiles from this position, the arrangements force the player to engage with space and the enemy attacks as outlined in the prior paragraph.

The transformations tied to the Bow Balloon and Ringosuki's projectiles, Puffy and Fat Wario, modify how the player deals with space. Since Puffy Wario can float up through the platforms, he can circumvent the platforming arrangement. The transformation changes the room into one big, accessible space which can only be traversed by ascent. Fat Wario, on the other hand, either confines Wario to the platform he's on or brings him to the ground. The transformation changes the room into a contained area which can only be traversed by descent. One transformation widens space and forces ascent, while the other narrows space and forces descent. The former is preferable pre-fold, while the latter is preferable post-fold.

If the player wants to retain Fat Wario's vertical position on a platform, then they need to have him walk back and forth until he returns to his former self.

Staircase Formation

Longer path, more risk and more effort.
Lower floors catch Wario's fall, initiative is rewarded.



Ladder Formation

Shorter path, less risk and less effort.
Gets Wario to his destination faster.

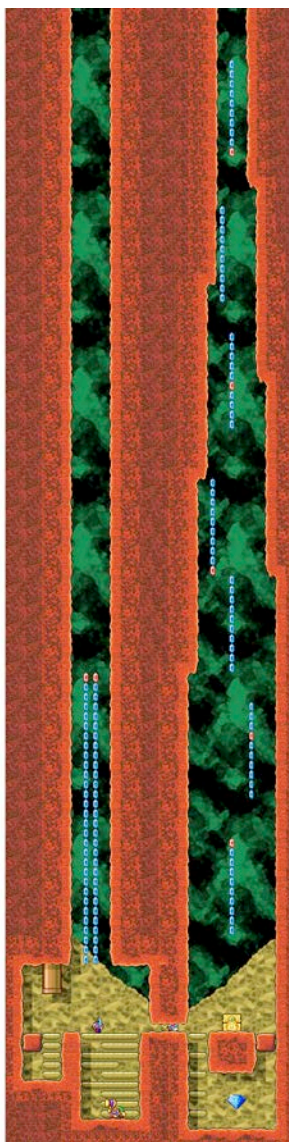


Room 3's platforms are arranged in a staircase formation. The layout maximises the number of horizontal jumps, which thereby increases the effort it takes to reach the top. As with the swinging platform arrangements,

progress is directly proportional to potential backtracking and tension. A key point of difference though is that because the staircase has floors, Wario can fall to a lower rung and thus minimise backtracking. There's greater punishment, but, equally, greater means to mitigate punishment. The staircase formation prompts the player to use their initiative.

The timing of enemies' movement along the platforms and the swinging intervals of the swinging platforms, whether or not Wario's in an enemy's attack range, how to respond to potential attacks, the diametric effects that the two transformations have on space, and minimising the punishment of a fall. Room 3 has a lot to take in. To clear the room, the player must identify and mentally organise the tangle of overlapping considerations. If they can do this well, then they can probably isolate the two secret rooms buried beneath the clutter.

Rising to the ceiling as Puffy Wario, the player will likely notice the block in the near-centre. Their association skills should prompt them to look for a means to break the block. That means can be found beneath a thick block in the floor. A leaf platform above the thick block prevents the player from HEIGHTENED SMASH ATTACKING the block, leaving them to rely on Fat Wario.



Fat Wario's weight makes him fall faster, restricting his horizontal movement. Like the current arrangements in Wildflower Fields, the crystals at the drop seize on Wario's limited mobility by having the player move him horizontally, testing reflex skills.

The block to the right can be broken (a basic observation test). In the lower section, moving towards the steps makes the bounding box concealing the adjacent room apparent as the camera doesn't scroll.

The gap between the two sides is only a unit high so that the player has to lure out the Totsumen and remove them, before safely CROUCH WALKING through. If the player hadn't already tried it in Wildflower Fields, the gap forces them to take advantage of the Totsumen's dash.

On the left, keen players will note the crystals above and the block in the floor. SMASH ATTACKING the block reveals the Menhammer at the bottom of a staircase, in the isolated chamber. If the player can get the Menhammer up the stairs, then they can use it to reach the crystals. In the past minute of gameplay, SMASH ATTACK has snagged Wario a diamond (assuming the player didn't use Fat Wario) and revealed the Menhammer. This precedence makes it easy for the player to realise the solution: more SMASH ATTACKS. For each thud to the ground, the Menhammer bounces up a step. SMASH ATTACKING multiple times to bring the Menhammer to the surface teaches the player an alternative use for the level 1 quake.

The only way to reach the crystals is to spring jump as Bouncy Wario. The long line of rewards encourages the player to keep Bouncy Wario still so that he smashes through the block in the ceiling of Room 3, straight up into Room 3.6. Secrets within secrets.

ROOM 3.6



Harimenzetto are implicitly introduced through the placement of level elements. As the slope is the first part of the arrangement to come into view, the player is reasonably likely to ROLL without thinking ahead, leading Wario to defeat the Harimenzetto and the player to learn of this method of beating the spiked enemy. Alternatively, Wario can flip the Harimenzetto over by doing a HEIGHTENED SMASH ATTACK off the leaf platform, and then SMASH ATTACK its yellow body. The leaf platform is placed between the slope and the row of unit blocks so that the player becomes suspicious and assumes that Wario can't safely ROLL without first removing the Harimenzetto. This leads them to experiment with the leaf platform. Just by the placement of game elements, the player, either through impulse or experimentation, learns how to interact with the Harimenzetto.

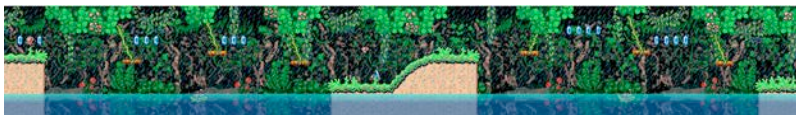
The left-most leaf platform catches Wario as he enters so as to minimise potential backtracking.

ROOM 4



Another riff on the swinging platform arrangements from Room 2, but the water is replaced by a vertical drop with Harimer at the bottom. Thanks to the height of the fall and position of the ladder, the backtracking is more severe, and thus there's greater tension surrounding the arrangement. The platforms are spaced similarly to the final set in Room 2.

ROOM 5



See Room 2. The gaps between the platforms are larger and there's more variety in the arc and speed of the swings.

ROOM 6



Remember how in the [Hall of Hieroglyphs](#), getting Wario to break the regular blocks in front of a thick block reminded the player of the DASH ATTACK'S run-up? Room 6 borrows this technique, but applies it vertically as Wario clears a path through the blocks which later acts as a passage for Puffy Wario.

The frog switch appears to prevent a run-up, but doesn't. Only the top part, the switch, is foregrounded. By putting the frog switch in the way of the thick block, players that try to clear the block learn that the bottom half of the switch isn't foregrounded.

One clue (thick block) leads to another (Bow Balloon). If the player caught a glimpse of the gap at the top of the room, they'll know what to do next: float up to Room 6.5. If they didn't, there's still the probably-incomplete line of blue crystals and context of the Bow Balloon to lure them upwards. The blocks cleared on the way down determine the difficulty of the path up. Another important lesson is taught through play: early initiative leads to later rewards. The room exhibits its own pure fold folded level design. Because Wildflower Fields already trained the player in navigating Puffy Wario, the challenge here is a little trickier.

ROOM 6.5



This arrangement facilitates experimentation and, once the solution is realised, tests reflex. The lock is the distance from the left-most leaf platform to the raised ledge. The DASH ATTACK JUMP can make the gap, but without a clear stretch of land for a run-up, the player's left to improvise. What they ought to realise through experimentation is that the mechanic's charge can be maintained over several jumps. After DASH ATTACKING along, and momentum jumping between, the initial two leaf platforms, it's not until the third when a charge is built and Wario can DASH ATTACK JUMP. The distance between the platforms ensures that Wario can only clear the gaps when jumping from the left-most edge of each platform. The limited window to react, compounded by the fast speed of the DASH ATTACK, drills reflex skills. If the player misjudges a jump and allows Wario to slip off a platform while DASH ATTACKING, it's easy for him to run into one of the Spearmen.

THE FOLD

This time, Wario is rerouted under the pre-fold, instead of over it. The player can retread the pre-fold route if they wish, however, frog blocks in Room 4 prevent Wario from accessing the swinging platforms. The soft punishment of falling into the water is diminished post-fold as Wario can swim to the subsequent island. The post-fold timer and slow speed of the swim mechanics and getting out of the water ensure that taking to the platforms is still imperative.

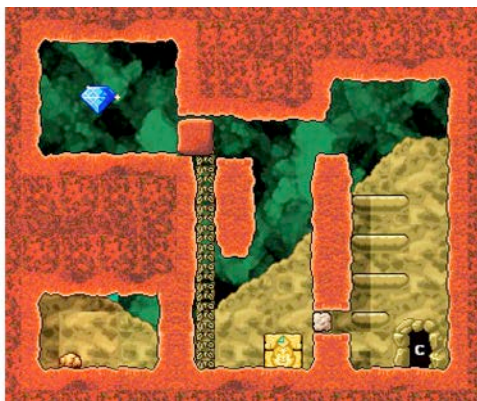
ROOM 7



The hills undercut Wario's jumps and ATTACKING a path through the towers of blocks is too time-consuming. The arrangement persuades the player to ROLL or DASH ATTACK instead. Yet by doing either, Wario moves at the fastest speed, making it easy to overlook the door hidden behind the second

tower. Subversion strikes again, teaching the player to be wary of the game design and observant for possible secrets.

ROOM 7.5



The clues to help the player reach the diamond are insufficient. The ladder brings the block into focus. The indiscriminate camera and lack of visual markers do nothing to indicate that the left-hand wall is breakable. The form doesn't fit the function. The player will only think of attacking the wall out of sheer randomness. Also, why is only the top half of the wall breakable? This only makes it more difficult to get the rock through to the other side. It makes no sense. The player is left feeling suspicious and inadequate, with a clue presented, but no visible means to address it.

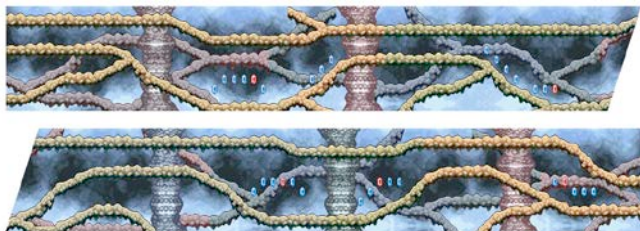
ROOM 4

The lower half is basically a copy of the upper half, approached from the bottom. Falling from the ledge drops Wario near the jewel piece chest, ensuring that the player knows to go back for it if they entered the room ROLLING or DASH ATTACKING.

In the right-hand wall, there's a sneaky, unit-high passage leading to Room 4.5, marked by the crack at the base of the ladder. Wario must ROLL JUMP up onto the ledge to ROLL on through the channel. Because of the raised flat's height and ROLL JUMP'S short ascent and limited mid-air suspension, the player needs to ROLL JUMP just before the ridge so that the jump hits its apex as Wario meets with the ledge. The short window of time, coupled with the speed of the ROLL, make the arrangement the most challenging reaction test in the game.

Considering that the level design encourages the player to pass through the room in one ROLLING sweep, the jewel piece chest is ill-placed.

ROOM 4.5



Similar to Room 7, minus the blocks. The crystals create an optional ROLL JUMP and reflex skills test.

ROOM 1.5



The real reward for discovering the secret route is the shortcut to Room 1. Wario defeats the Harimenzetto when ROLLING into the room. This reinforces the points made in Room 3.6.

ROOM 1

It's easy to overlook the Keyzer, which is now accessible from the frog block platform. Like Mystic Lake's music CD, the setup facilitates short-term information retention.

RUBY PASSAGE: THE CURIOUS FACTORY

LOWDOWN

Passage: Ruby Passage

Level Number: 1 of 4

Visual Theme: A factory

Game Idea: Mechanisation and Taylorism

Key Level Elements: Wheel platforms, crushers, decompressors, conveyor belts, rotating platforms

Folding: Reroute

Fold Measures: Frog blocks, pipe

Enemies: Togerobos, Spearmen, Marumen, Totsumen, Kaentsubo

Number of Enemies: 14

Heart Medallion: No

Number of Floating Hearts: 7

INTRODUCTION

The Curious Factory's exclusive level elements simulate the mechanical processes of a factory in a varied and engaging manner. Conveyor belts create an opposing force along the ground. Crushers flatten Wario. Decompressors return him to his neutral state. Wheel platforms divide platforming down into a series of smaller jumps, stressing reflex, timing, and adaption skills. The visual theme sets the appropriate tone as well with circuit board walls made of knobs and dials, supported by an underground network of pipes and tubing, all of which are coloured in gunmetal grey and a dingy tan. The path through the level deviates from the standard rectangular shape, rising at the fold before dipping downwards into the basement and looping back around to the vortex.

GAME IDEA

The game idea for The Curious Factory is that of the factory itself, mechanisation and Taylorism. Mechanisation is the introduction of machines into human processes as apparent through the wheel platforms (jumping), conveyor belts (walking), crushers, and decompressors (transforming). These level elements automate the interactions or, at least, make them easier for the player.

Taylorism is the concept of dividing labour down into its smallest units for economic efficiency. This way, goods can be mass-produced as each worker only needs to repeat the one basic action multiple times. The Curious Factory emulates Taylorism by altering arrangements which would usually be beaten in one or two interactions so as to require a series of interactions. The wheel platforms divide one large jump into several shorter jumps, Flat Wario turns falling into a management of timed sways, and the conveyors—if the player allows them—remove walking altogether. Since Wario is the only worker in the factory, Taylorism ends up increasing the difficulty by giving the player more opportunities to stumble.

GAME IDEA TIMELINE

Wheel Platforms: Function as a staircase, function as a transport device, the reset factor—Diagonal rails and verticality, stronger focus on the reset factor—Rotating platforms arranged vertically—Rotating platforms arranged horizontally

Flat Wario: Decompressors implicitly introduced—Restricted introduction of crushers and decompressors—Swaying introduced—Swaying tested

Conveyors: Empty, with a Togero—As platforms with Spearman—As platforms with Totsumen—To trap Wario into transforming—As an express lane to the exit

ROOM-BY-ROOM ANALYSIS

ROOM 1



Blocks, as providers of risk-free interaction with satisfying feedback, get the player's attention. In the first arrangement, they put the focus on the ground area to highlight the conveyor belt.

The second arrangement appears simple enough, but simultaneously dealing with the Togero and the pull of the conveyor is surprisingly tricky. Let's pretend there's just the Togero. At any one point, the player needs to monitor at least one of three variables: Wario's relative position to the enemy (general response time), the time it'll take the spiked head to roll and hit him (dodging the attack), and the time it'll take the head to respawn (the window to attack). Factoring in the conveyor belt, the player also needs to be conscious of whether or not Wario's on it and, if so, what effect it has on

his relative position. Put the two together and the player can be dealing with two to five variables at any one time. The conveyors add an extra level of engagement to an already challenging enemy.

Considering that Togerobos are on normal ground in Room 2, pairing the robot with the conveyors in Room 1 only creates an initial difficulty spike. Why not introduce the enemy separately?

The leftward push of the conveyor distances Wario from the robot, giving the player more (reaction) time to avoid its attacks.

The second arrangement also demonstrates that enemies are unaffected by the conveyor.

The conveyors slow movement in one direction and accelerate it in the other. Although they modify Wario's horizontal movement, this doesn't then affect his jumps. In other words, jumping frees Wario of the traction as a means to resist the conveyors. To some extent, the blocks help introduce this aspect of the conveyors by being in Wario's way, encouraging the player to jump.

ROOM 2



The entrance is marked with a decompressor. Because the machine looks fancy, is part of the foreground, and Wario must pass through it, it asserts itself as something important, even though the player doesn't know what it's used for just yet.

Wario needs to move the wheel platform from one side of the rail to the other in order to reach the upper ledge. Height is the lock and the wheel platform is the key. Experimentation teaches the player how to operate the device (keep jumping on the right-most step). As with the diamond in the [Hall of Hieroglyphs's](#) HEIGHTENED SMASH ATTACK tutorial, the crystals encourage higher, more pronounced jumps, so the player can clearly see the cause and effect relationship. Once at the end of the rail, the wheel platform acts as a staircase.

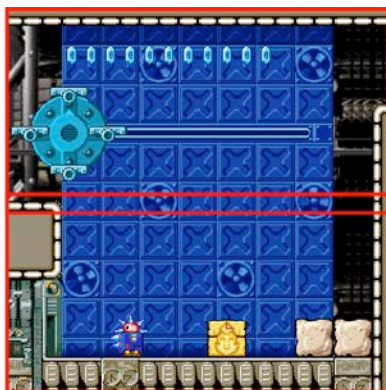


When standing on the wheel platform's lowest step halfway along the rail, Wario can touch the Togerobo's spiky head. The hit box doesn't extend out to the tips of the spikes. Only if the robot then pops their head off, will it rise enough to meet with Wario's hit box and hurt him. Rarely do the arrangements inform the player of the hit boxes.

The upper-left arrangement is, like the decompressor at the entrance, a curiosity marker. Depending on when the player draws the connection between Flat Wario and the gap, they'll either grab the diamond pre- or post-fold. If it's the latter, the arrangement tests memory skills.

Wheel Platform

Fall Area



The second wheel platform arrangement uses verticality as both a soft punishment and a means to draw attention to the wheel platform's reversion to its original position on the rail when it leaves screen view. The arrangement is divided into two rectangular bounding boxes: the wheel platform and the fall area. If Wario moves the wheel platform three rotations or more and falls, its position resets as soon as he enters the fall area. Without the automatic reset, Wario wouldn't be able to climb back onto the platform and cross the gap. He'd have to manually restart the arrangement by leaving and re-entering the room. The game prevents the player from putting themselves in an unnecessarily difficult situation. The fall area's screen-tall bounding box ensures that the camera stays vertically still, never revealing the wheel platform when Wario jumps. This conceals the magic trick and prevents the reset from coming off as jarring.

The jewel piece chest ensures that Wario enters the fall area. The crystals are a little higher than before to assist in Wario's potential fall. The ladder pokes out so as to lure the player downstairs. Although subtle, these elements work together to increase the likelihood that the player will, at least subconsciously, notice the resetting aspect of the wheel platforms

Unlike the first arrangement, the lock is horizontal distance, so instead of acting as a ladder, the wheel platform doubles as a mode of transport. How to operate the wheel platforms, their use as both a staircase and transportation device, and their reversion to their original location when off-screen is all covered in this one room.

ROOM 3



Flat Wario debuts with the crushers initiating the transformation. The player can avoid the crushers by following their timing and red (active) and blue (inactive) lights. The middle press runs on an alternate timer to the outer pair, making the set harder to avoid. The decompressor is to the right of the crushers so that the player learns how to use the two level elements before advancing. And in case the player avoids the first trio of crushers, the arrangement is repeated on the lower floor. The space behind the wall clues the player in on the secret area.

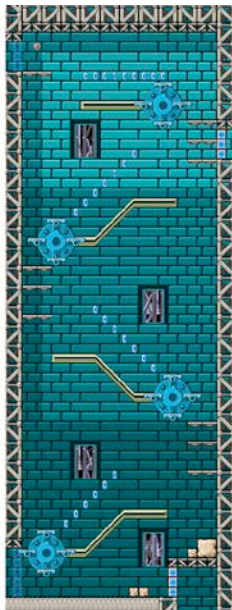
RETURNING TO ROOM 2

If the player makes the connection between Flat Wario's elongated horizontal shape and the unit-gap curiosity marker at the top-left of Room 2, they'll likely want to backtrack and investigate. It takes quite the intuitive leap though, considering that Room 3 only introduces how to enter and exit the transformation. Post-fold, Wario passes from Room 3 to Room 2 and is likely to get squashed in the process, setting the context for an easier realisation.

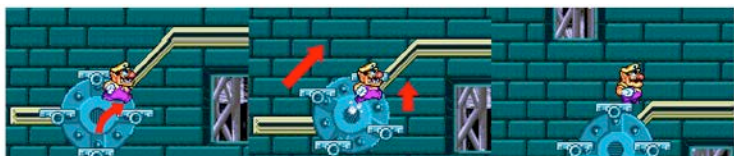
To reach the centre ledge, Flat Wario needs to jump and glide leftwards. Only with the added height of the jump can he make the distance. (This is the peak of the transformation's application). The second set of jumps is a bit easier. The decompressors get the player out of a bind if they mess up. In which case, the punishment is going back to Room 3 and transforming

again. The decompressor near the entrance ensures that the player can't waste time exploring Room 1 as Flat Wario. The top-left decompressor quickens the exit. Post-fold, the arrangement is a trade-off between risk (time) and reward (diamond). Pre-fold, the player has the luxury of time.

ROOM 4



The wheel platform rails are now diagonal and arranged in layers. The crystals bait the player to get Wario up to the wheel's top step for each rotation. To do this, Wario needs to full JUMP as soon as the wheel platform's set in motion so as to land on what will be the top step when the rotation ends. The arrangement tests reflex and dexterity as the earlier Wario JUMPS off the front platform, the sooner he can reach the apex of the JUMP and successfully land on the top step. If the player delays, the front platform lowers and the JUMP's height is undermined.



Wario jumps to the step that will drive the wheel platform forward.

As soon as the wheel platform starts rotating, Wario full JUMPS. There's almost no downtime between the two jumps

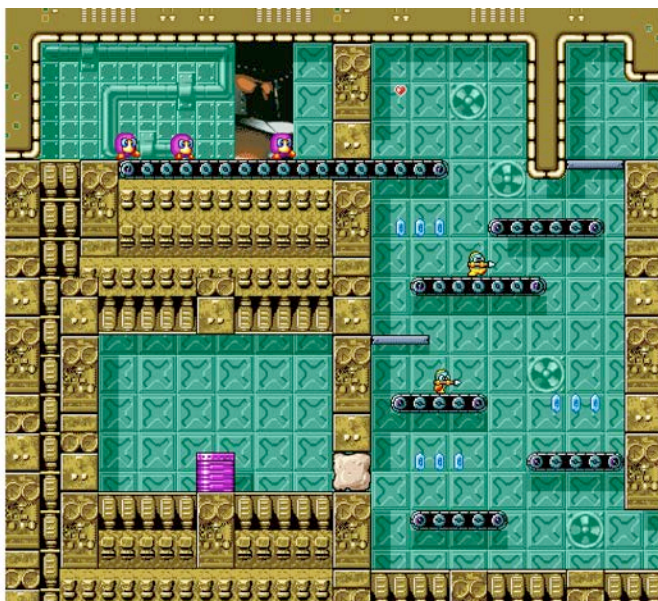
If the player didn't dally on the full JUMP, Wario will reach the crystals ..which I already took beforehand.

The window of time that the player has to react is shorter on the diagonal rails as the wheel platform ascends up the rail, meeting the full JUMP'S height. When the wheel platform is on a horizontal rail and doesn't ascend, Wario's JUMP isn't undercut, so the player has more leeway to reach the top step.

Wario can also ride each wheel platform to the end of the rail and then backpedal from the opposite side to reach the crystals. This second approach trades time for ease.

The multiple layers make the resetting aspect of the wheel platforms more apparent. The wheel platform directly below Wario returns to its original position once he reaches a height where he can't easily bring it back into view. Although this can be somewhat jarring when Wario falls and the player sees all the wheel platforms they moved in their default locations, with no need to backtrack, most players won't notice it. If Wario falls off the first wheel, where he can't get out of the screen's view to reset its position, the unit blocks on the floor can be used to reach the ledge and, from there, the wheel platform.

ROOM 5



The Spearman on the conveyor platforms test timing skills. The arrangement more clearly asserts the lack of influence that the conveyors have over enemies.

There are two secret areas. Both require that the player identify the visual outliers, the block in the wall and the conveyor belt running into the wall.

ROOM 6



Room 6 has three sections: the upper, mid, and lower arrangements. Each section is confined to a rectangular, screen-tall bounding box. The upper arrangement is a variant of the conveyor belt theme. A Totsumen is placed on the first conveyor belt platform for the following reasons:

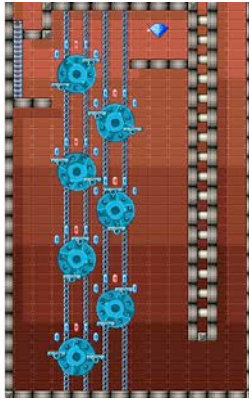
- » With Wario and the Totsumen sharing the same small platform, Wario will almost invariably be in the enemy's range. So once he lands on the platform, the player has to quickly react to the forthcoming charge attack.
- » Simultaneously dealing with the enemy and the conveyor increases engagement.
- » The player can lure the Totsumen off the platform to scale the arrangement.
- » Being closer to the ladder reduces potential backtracking.

The conveyor belt arrangements are fleshed out through the addition of enemy types. From the slow-moving Togerobos to Spearmen and the nimble Totsumen, the enemies become increasingly confrontational.

In the lower arrangement, the two raised segments divide the floor into unequal thirds. The Kaentsubo debuts next to a fire block. The form of the two game elements does all the hard work for the player. Once again, a gap behind a wall tips off breakable terrain. This time though, it's made of thick block. The raised segments create the impression that there isn't enough runway to DASH ATTACK. The player must think outside the box and have Wario momentum jump over the right-hand segment to build enough charge to break the block. Pushing the perceived constraints yields access to Room 6.5.

In the upper arrangement, the frog block wall, which prevents Wario from advancing, leads the player to search for the frog switch and thus go against the custom of avoiding pits. The player is taught to challenge the conventions of the platforming genre.

ROOM 6.5



The wheel platforms are no longer attached to rails, instead, they spin independently on the spot. The close proximity of these two-step rotating platforms ensures that there's always a nearby platform waiting for Wario on each rotation. The fast rotation speed shortens the time the player has to jump (reflex). The fixed rate of the cycles gives the player a pattern to follow (timing). Because the platforms still move as Wario's jumping, the player needs to track them while he's in mid-air (knowledge). For this reason, JUMP is the most appropriate mechanic as it allows the player to guide Wario to his landing (dexterity).

If Wario stands on the left edge of the top-most rotating platform, he'll clip the corner of the ceiling and be pushed back into position¹.

THE FOLD

The fold is a reroute, sending Wario down to the factory's basement. Frog blocks play their usual role. The platform with the frog switch leads Wario off to the right so that the player doesn't miss the jewel piece chest. The ladder creates negative space (where the player is only holding the up arm of the d-pad) which draws attention to the timer and fuels tension. The Kaentsubo can only worsen the situation.

¹ Clipping in Curious Factory—<http://youtu.be/SxewyB0BmCw>

ROOM 7



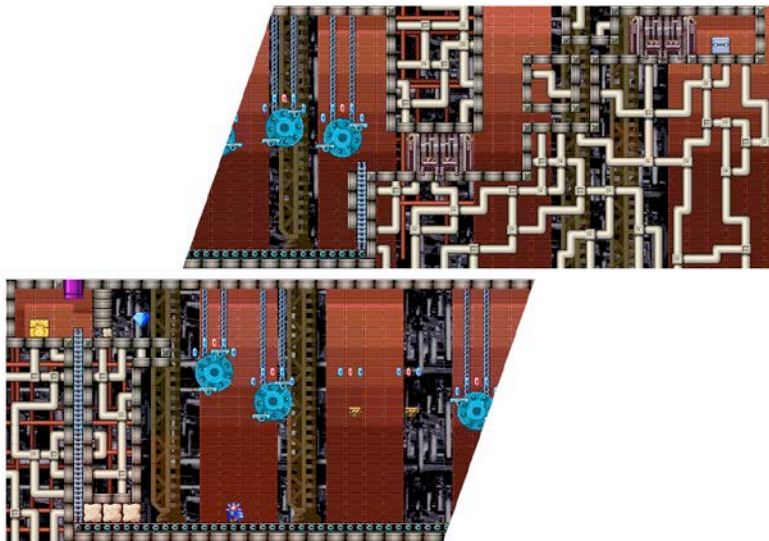
The platforms only slow Wario's fall. The holes are wide enough for the Totem Pole to easily descend the floors if it charges into the wall or is bumped downwards. Wario will invariably be flattened as the conveyor slows his escape. The conveyor belt and Flat Wario game ideas combine.

ROOM 4

Room 4's height compounds Flat Wario's agonisingly-slow fall, building tension under the post-fold timer. When the player's wishing Flat Wario would hurry up and reach the ground, they have nothing to do and are likely to respond by pushing buttons to see if they can make him fall faster. This, in turn, allows the player to realise that they can control Flat Wario's sways, something which they haven't had the chance to figure out thus far (ignoring the backtrack to Room 2). The long drop gives the player ample time to familiarise themselves with the mechanic. The wheel platforms and leftover crystals are obstacles and rewards which persuade the player to sway in specific directions, building up competency. The transformation, post-fold timer, and position of the entranceway give the wheel platform arrangements renewed purpose.

Although Flat Wario can steer the wheel platforms, the grey ledges against the walls are separated enough that he can't ascend them, preventing the player from needlessly climbing all the way back to the top. Regardless, the upper entranceway is sealed with frog blocks.

ROOM 8



The sway mechanic practice is put to use as soon as Flat Wario enters the room. Landing on the platform nets the player a CD. If they swing too early or too late, Flat Wario hits the wall and bounces back. It's all about timing, remembering the trajectory of the swings, and foreseeing Flat Wario's fall.

In the main area, the rotating platforms are arranged horizontally. Arranged vertically, the lower platforms catch Wario's fall, minimising backtracking. Arranged horizontally, all falls lead to a restart. The punishment is greater. The conveyors, pushing to the right, speed up any backtracking. The ladders add tension through negative space. The two industrial platforms mix up the arrangement to keep the player on their toes.

The player can neglect the rotating platforms, however, the tall ladder and pull of the conveyor against Wario remove any time advantage. Taking the upper route not only requires less time, but rewards the player with crystals and a diamond. The benefits are twofold.

RUBY PASSAGE: THE TOXIC LANDFILL

LOWDOWN

Passage: Ruby Passage

Level Number: 2 of 4

Visual Theme: Rubbish dump

Game Idea: Garbage archaeology

Key Level Elements: Breakable terrain, weak blocks, thick blocks, regular blocks, water

Folding: Reroute

Fold Measures: Frog blocks, height

Enemies: Shieragutchi, PET Bottles, Menhammer, Ringosukis, Bow Balloons, Goggley-Blades

Number of Enemies: 22

Heart Medallion: Yes

Number of Floating Hearts: 10

INTRODUCTION

Wario Land 4's most important level elements—the ceilings, walls, and floors—have barely been mentioned in this book due to their self-explanatory nature. That is, until we reach a point of contention like The Toxic Landfill.

In every level, the architecture is tiled with a consistent pattern. The uniform appearance visually distinguishes the ceilings, walls, and floor from the other game elements. The Toxic Landfill's textures are an inconsistent mix of different tiles following a similarly grungy colour palette. The colour still distinguishes the terrain from the other game elements, but the mismatch of tiles allows regular, thick, and weak blocks to blend in. The arrangements use this to their advantage. Blocks and breakable terrain take the role of locks, and various clues help the player identify them. Finding the locks requires observation and the ability to reverse-engineer hints (knowledge). Locked areas often conceal clues to the subsequent lock. In this way, the arrangements are similar to real-life excavations as a minor reveal can lead to a huge discovery. Since the terrain is made of garbage and there's a layer of stink wafting over the level, the context is one of Wario digging around a rubbish tip for treasure.

The Toxic Landfill's background music is quite similar to a track from Unirally on the SNES. You can listen to both in the reference¹.

Because the arrangements hinge on the visual obscurity of the locks, the analysis will focus on how the clues subtly bring them to the player's attention.

GAME IDEA

The game idea is about Wario mining trash for secrets. A variety of means to clear the blocks and breakable terrain (ATTACK, DASH ATTACK, JUMP, Fat Wario, and Bouncy Wario) and ways in which they're arranged (vertically, horizontally, and in small clumps) flesh out the concept. Although Wario smashes blocks in all levels, The Toxic Landfill takes the idea and runs with it.

There are four types of terrain:

Blocks: Regular and thick, you know the score.

Weak Blocks: Cracked regular blocks that blend into the terrain.

Breakable Terrain: Blocks that look like terrain, but are breakable.

Terrain: Define the outline of the room, can't be broken

From blocks to breakable terrain, each type is harder to distinguish from terrain. Blocks usually share the same colour. Weak blocks have the same colour and their cracked texture is similar also. Once the player breaks one, they know that they can all be broken, and so the cracks become a visual identifier. (The arrangements ensure that the player realises this early on). Breakable terrain disobeys form fits function and looks exactly like terrain; the player can't tell them apart.

When the player can't visually distinguish between a wall and a breakable block, the only way to find out which is which is to attack. As the rooms become larger, containing more offshoots and rewards hidden behind breakable terrain, the player may feel that they need to attack each and every block in a potential sea of them. This would be irrational. Games can easily encourage certain kinds of behaviour which lead to unproductive play, but in the case of The Toxic Landfill, a strict adherence to visual prompts keeps the player on the right path. Breakable terrain is only used once as a mandatory lock (several times for optional locks to rewards) and is surrounded by clues which alert the player of its existence. The prompts—not just for breakable terrain, but all blocks—teach the player to only break blocks on the basis of visual evidence.

¹ Uniracers – Race 1: <http://youtu.be/UIQDiHp-HSG>

Wario Land 4 music–Toxic Landfill: <http://youtu.be/yrVFG9IqZX4>

There's a surprising amount of variety in the application of clues. Here are a few examples which highlight what I mean:

- » Putting thick blocks before lines of weak blocks so that, by breaking the thick block, the player also breaks the weak blocks (Rooms 2, 5, and 6).
- » Being able to see the other side of a wall (Rooms 1, 2, and 5).
- » The layout of terrain makes the breakable parts stand out (Room 5, top arrangement).
- » Leave the player with no other choice but to attack the blocks (Room 4).

Underwater, the blocks and breakable terrain arrangements are optional. Only weak blocks are used as, with the dirty water overlay, they're already difficult enough to identify. Furthermore, since it's less likely that the player will break blocks underwater, the visual markers need to be clearer. Although, I'd wager that the weak blocks are barely visible as it is.

The Ringosukis play a recurring part throughout the level, with their role changing multiple times. Their relationship with the player constitutes a minor game idea.

GAME IDEA TIMELINE

Breakable Terrain: Breakable terrain and weak blocks, the attack mechanics—Thick blocks, weak blocks, and optional breakable terrain, Fat Wario—Optional weak block underwater, Fat Wario—Player is forced to clear wall of weak blocks, Bouncy Wario—Optional weak block underwater, HEIGHTENED SMASH ATTACK – Thick blocks, weak blocks, and multiple layers of breakable terrain, DASH ATTACK and JUMP – Thick blocks and weak blocks, Fat Wario

Ringosuki's Role: As an aid—As a hinderance—As an asset to be transported

ROOM-BY-ROOM ANALYSIS

ROOM 1



Room 1 has two states, one for the pre-fold and one for the post-fold. The two states work within each other's design. Pre-fold, Wario enters from the top of the room, with the Bow Bloons sealed behind frog blocks. This first state warms the player back into gameplay through the arrangement of platforms and crystals and introduces the game idea through the breakable terrain on the bottom-right. Post-fold, Wario enters from the bottom of the room, with the frog blocks deactivated. This second state tests the player's ability to manoeuvre Puffy Wario around the platforms, up into the vortex.

Pre-fold, the player might only clear *some* of the breakable terrain. The remaining blocks can later choke Puffy Wario's path post-fold. The ladder is to the left and the Bow Bloons to its right to increase the likelihood that Wario transforms away from the potential obstruction.

The platforms are spread far apart so as to give the player enough time to navigate around them as Puffy Wario. On hard, Spiky Balls float underneath the platforms to not just shorten the player's window of response time, but punish them for not reacting fast enough. By virtue of the arrangement accommodating the transformation, pre-fold, the player can't see where Wario will fall, and so crystals are added as a visual handrail. Each state takes liberties to work around the constraints of the other.

There are two curiosity markers: the first; the topmost platform and floating heart briefly in view as Wario falls from the vortex and the second; the Bow

Balloons and jewel piece chest visible underneath the frog block floor. The second marker leads to the first. Both generate player interest and allow for information retention, even though reaching the topmost platform is only necessary on hard, when the heart is replaced by the jewel piece chest.

The crystals lead Wario to the foot of the staircase. With more crystals visible on the other side and the floor void of additional game elements, the stage is set for experimentation. Only by attacking the terrain, can the player realise that it's breakable. The bar of this restricted arrangement is set high to establish a curiosity for weak blocks and breakable terrain.

The TV block Wario lands on isn't breakable terrain, even though an identical block a little higher is. The out-of-place, unbreakable block makes the player conscious of the difference—or rather, lack of difference—between breakable and regular terrain.

ROOM 2



Room 2 shifts the focus to the differences between the four terrain types. The restricted practice loosens up with pockets of optional secrets. The left-hand thick block in the floor is the lock and Fat Wario is the key. The ladders, Ringosukis, and gap in the ceiling are clues. The ladders come out from behind the thick blocks, but lead nowhere. The Ringosukis' red bodies stand out against the greyish backdrop, grabbing the player's attention

and reminding them of Fat Wario. Further, upon their raised platforms, the enemies cover a larger space and are isolated from Wario's attacks, increasing the likelihood that Wario will transform. By spotting these clues and piecing them together, the player can deduce a solution.

Thick blocks are put on top of the columns of weak blocks as:

- » They're easier to distinguish from the terrain.
- » The player already knows how to break them.
- » By breaking a thick block, Fat Wario then falls through a line of weak blocks. Because he doesn't pause after breaking each weak block, the player learns that they're equivalent to regular blocks.

To get the latter most point out of the player's subconscious and into their hard memory, the subsequent drop uses a weak block as a lock.

The two vertical drops facilitate information retention, granted the player wants to explore both paths (they must remember to return to the second after taking the first). The right-hand drop leads to an area with a Bow Balloon. The enemy sits behind a wall of weak blocks to prevent Fat Wario from landing on or walking into it. If the player wants to pursue the gap in the ceiling, either action would remove the Bow Balloon and prompt them to manually reset the arrangement. The weak blocks therefore save the player from potential inconvenience. By the time Fat Wario lands, walks enough to burn off the transformation, and then goes to break the wall, the Bow Balloon will have had several opportunities to fire an arrow at Wario. The crystals lure the player to the right, giving the enemy even more time to attack. The slow speed of CLIMBING the ladder, exacerbated by its length, persuades the player to float up as Puffy Wario. The weak blocks, crystals, ladder, and length of the drop work together to guide the player to the entrance of Room 2.5 (secrets within secrets).



The Bow Balloon enters screen view on the first leg of the left-hand drop (and can fire its arrows through the wall), reminding players who overlooked the right-hand drop. They can also see the crystals behind the left-hand wall. The rewards bait the player to remove the breakable terrain, which sets the

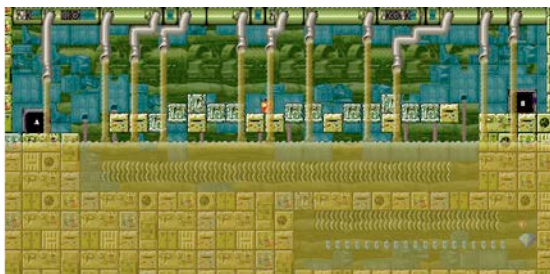
context for them to repeat the action on the ground floor, without the visual prompt. The two arrangements lead the player to independently pursue visual markers and patterns so as to uncover breakable terrain. The seeds are planted for the more sophisticated excavation in Room 5.

ROOM 2.5



The purple pipe is a little difficult to notice as it's embedded in the ceiling. Players who overlook it won't feel like they missed out as the diamond is a sufficient reward. The distance between the platforms ensures that if Wario doesn't reach the pipe, he'll have to re-enter the room as Puffy Wario (the player can't cheat). As mentioned earlier, the Spiky Balls shorten the player's time to react. The central column of crystals is only a unit from the spikes, daring the player to play chicken. Similarly, the other two sets are only a unit from the ceiling. This close, if the player collects all the crystals, they'll have little time to move Puffy Wario so as to land on the upper platform. The crystals can be counter-productive since they lead the player to repeat the arrangement. Thus is the nature of risk/reward.

ROOM 3



Because landing in the water prevents Wario from reaching the right-hand ledge and the platform suspended over the water is made of several weak blocks, Fat Wario's properties and the interplay between Wario and the Ringosuki are the focal points. Fat Wario's unit-high jump and automatic HEIGHTENED SMASH ATTACKS deny the player from covering much ground, let alone crossing the right-most gap. They must therefore enter the Ringosuki's range to elicit an apple throw, avoid the projectile, and then, in the downtime between throwing animations, move past or attack the enemy. Room 2 defines Fat Wario as powerful, while Room 3 defines him as unflattering. As is the case with all the transformations, the arrangements examine both their strengths and weaknesses.

Getting hit by one of the Ringosuki's apples forces the player to either walk off Wario's weight or have him fall into the water. Walking back and forth along a 2-to-4-unit space seems a tad silly. The longer Wario remains in the transformation, the more strongly the player's failure is felt, so there's a psychological motivation to drop him in the water where he reverts almost immediately. Despite saving face, this option ultimately takes more time as Wario must swim back to the left-hand edge and retry the task. Since walking back and forth is faster in the long run, the arrangement teaches the player to deal with failure for the sake of progress. Equally significant though, the motivation creates the context for the player to realise that Fat Wario only reverts back after touching the floor of a pool of water, not the water itself.

Underwater and to the right of the Ringosuki is a block which leads to a secret duct with crystals and a diamond. The position of the weak block, where Wario's most likely to touch one of the Ringosuki's apples, increases the likelihood that the player will stumble upon the secret area. Such scaffolding is necessary given the opaque visual clue.

The currents speed up backtracking. Because of his buoyancy, Wario can only ride them in short bursts before floating out. Buoyancy weakens the

effectiveness of the currents, eliciting more interaction and awareness from the player. The Goggley-Blade, not in the reference, is ill-placed as the currents only push Wario into it, giving the player an inadequate window of time to dodge.

ROOM 4



Bouncy Wario's bottom-up approach nicely complements Fat Wario's top-down block breaking. I discussed this room in detail under the Retaining Information heading in the [Skills and Challenge Types](#) section, so I quote:

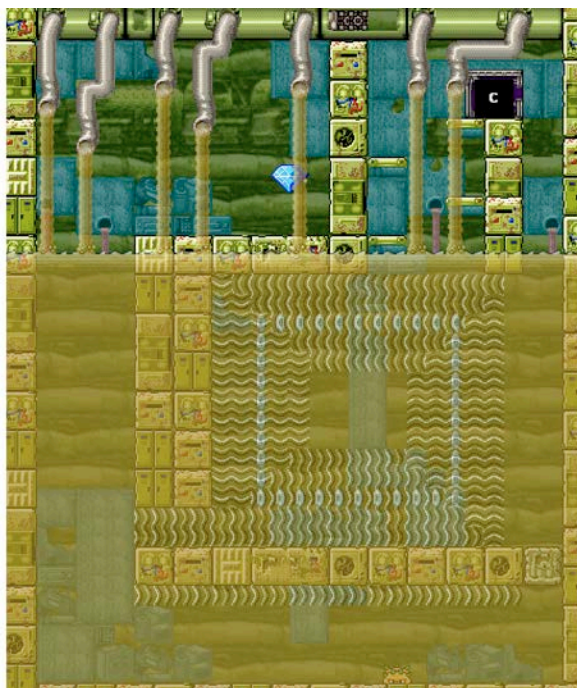
"The player uses the Menhammer to transform into Bouncy Wario and spring jump through the weak blocks. Assuming that Wario doesn't make it up one of the two exit channels, on the player's first jump, he'll hit the lower ceiling. With Wario atop of the weak blocks, the player can see the upper half of the room and determine the horizontal location of the channels. Since Wario can't reach them though, the player must remember their relative positions and head back down to the ground floor. The wall of weak blocks establish the time in which the information must be retained. Once Wario returns to the ground, the player needs to recall one of the two locations, transform, and then spring jump back up.

Information is dynamic in three ways. Firstly, the information, the relative position of either channel, changes as the player moves Wario away from where they originally took the data. The player therefore needs to constantly monitor, check, and confirm the information.

Secondly, how the player remembers (monitors, checks, and confirms) the information is up to them. Do they count the number of weak blocks away from the cleared path? Count the number of blocks from the wall? Store a rough position and then recall it through brute force? Or SMASH ATTACK in a straight line directly underneath one of the channels so that they don't need to memorise at all, effectively trading time for short-term memory skills?

Thirdly, every time Bouncy Wario spring jumps, the player is reminded of the exits' locations. Yet, at the same time, he clears a new path through the weak blocks, altering the visual markers which help the player retain the information."

ROOM 4.5



The diamond behind the wall sets the impetus for exploration. The underwater channel from the floor around to the left-hand wall is visible, but sealed off by a weak block and looping current. Three clues help the player solve the arrangement: the bounding box that allows them to see into the channel, the weak block, and the long vertical channel (see: SMASH ATTACK conditioning in [Wildflower Fields](#)).

The current in the secret channel shortens the vertical distance between Wario and the Shieragutchi, stressing the player's reaction time and punishing them if they flinch and move Wario up to dodge. The player isn't just rewarded with a diamond, but the convenience of nabbing the crystals on the way out. If they can't solve the puzzle, likely assuming that they can somehow swim past the current, the crystals, as a consolation prize, reduce the loss.

ROOM 5



Room 5 is the largest, most secret-dense, and therefore freest room in The Toxic Landfill. Its horizontal orientation accommodates the DASH ATTACK, the room's excavation tool of choice.

The initial thick block, which seems suspiciously out of place, encourages the player to DASH ATTACK, planting the mechanic in their consciousness for when it's needed to floss out the main route. Without the thick block to set the context, the player would be more likely to break each block individually. The crystals and clump of regular blocks draw their attention to the main route.



Based on deductive reasoning, the breakable terrain leading to the door can only be one of these light-coloured squares.

The upper, optional route is less obvious as its entrance is marked with breakable terrain. The jewel piece chest lures the player over, while the weak blocks convince them to break down the wall. The marrow of weak blocks lead to a heart medallion chest. The door below motivates the player to find a way in, past the breakable terrain. Using the door's relative location as a clue reduces the area of search. The player needs to picture the outline of the secret area and find the closest point of access from the outside. In this case, one of the steps of the staircase.

Since the player is encouraged to DASH ATTACK through to the end of the main route, it's easy to overlook the weak blocks beneath the staircase

on the way down. Behind the breakable terrain entrance are crystals, a diamond, and a purple pipe. Jumping to reach the diamond briefly reveals the CD chest at the top of the screen, encouraging players to unearth more breakable terrain. Because the rewards in the initial section are pretty generous, players are likely to feel satisfied, even if they miss the silver chest.

ROOM 5.5



Room 5.5 is the most ridiculous room in *Wario Land 4*. There are two arrangements. The first is the diamond in the underwater channel sealed up by the weak block. Because the ledge is too low and the weak block too far to the left, Wario can't HEIGHTENED SMASH ATTACK the block or jump onto it as Fat Wario from the right-hand side. Instead, he must PICK UP the Ringosuki, JUMP halfway across the pool, and THROW it over to the left where he can then transform and fall onto the weak block. There are three barriers preventing the player from realising that this arrangement even exists:

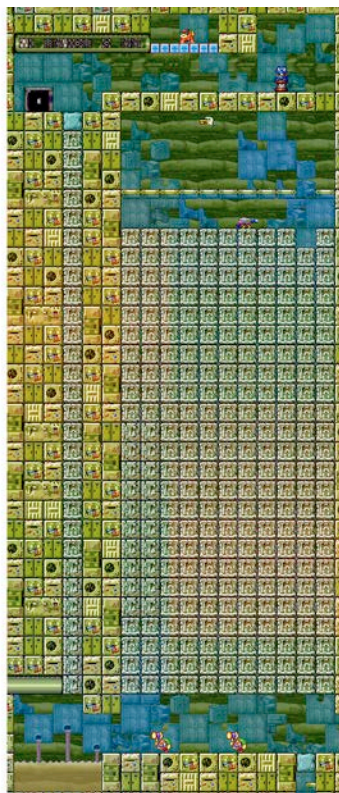
- » So far, the presence of weak blocks underwater has been minor at best (one has no hints and the other is locked away in a side room), so whilst some players *may* be aware of them, most likely aren't.
- » By jumping the pond on the way in, the player brings the upper diamond into view and is likely to assume that it's the only reward, given that side rooms tend to only offer one diamond at a time.

- » The Ringosuki's weight shortens Wario's JUMP, forcing him THROW in mid-air. Because the player must put Wario in a situation where if they fail, they'll need to manually reset the arrangement (as the Ringosuki touches the water), the interaction feels uncharacteristically forced. Players aren't likely to brute-force their way through, given the game's insistence on elegant solutions.

The second arrangement, the diamond in the upper area, requires similar leaps of logic. Wario must use the Ringosuki as a projectile to clear the unit blocks and then transform into Fat Wario where he can level 2 quake the Menhammer down through the gap. After walking off the weight, Wario can transform into Bouncy Wario and spring jump to the upper area to claim the reward. Because of the Ringosuki's weight, Wario must CHARGE THROW or JUMP and THROW. The enemy triples as a means to clear underwater blocks, unit blocks, and bring the Menhammer to the ground.

These arrangements are frustrating not just for their opacity, but because it's easy to be forced into a manual reset. To avoid resetting the arrangement, the player mustn't attack the Ringosuki, THROW the Ringosuki too short, land in the water while holding the Ringosuki, touch the Menhammer as Fat Wario, attack the Menhammer, or knock the Menhammer into the water.

ROOM 6



The thick block is the lock and Ringosuki the key. The frog switch and frog blocks double-lock the arrangement.

THE FOLD

Because of Room 1's recycled state post-fold, the fold only needs to redirect Wario through one new room. The frog blocks lock access to Rooms 2 and 5, while opening up Room 1's ground floor.

Fat Wario (including his reversion on touching the floor of a pool of water), Bouncy Wario, and the SMASH ATTACK are combined as the apex of the game idea.

From the frog switch, the player can see the Keyzer underneath the floor. Like Room 4, Room 6 tests information retention. Now though, because Wario must transform into Fat Wario and jump out the water, the time between seeing and acting, the time of retention, is longer. Furthermore,

because it's off to the left, the vertical channel displaces Wario horizontally, changing the relative position of the Keyzer, the data. Add in the post-fold timer and this arrangement is much more challenging than Room 4.

If the player can't recall the location of the Keyzer, then their misdirected spring jumps remind them by bringing it back into view. Retrying gives the player more knowledge to work from and a shorter retention time (as they don't need Fat Wario), making the arrangement easier. Failing therefore doesn't feel so bad. Regardless of how many tries it takes the player to get it right, they must retain and adapt the information, unless they get lucky.

I almost forgot to mention that because Bouncy Wario can only the break blocks above him, once the player makes a decision, it's locked in. They can't alter Wario's trajectory as the Keyzer comes into view.

The pool of water reverts Fat Wario back instantly, instead of having him walk off the weight where it's possible that the player could accidentally clear the Menhammer. In case they do—as regular Wario, of course—Room 6.5 to the right provides a quick reset.

On the way down from getting the Keyzer, the gap in the platform and missing weak block tell the player where to SMASH ATTACK from. The thick block directly underneath dovetails nicely into the subsequent room.

ROOM 7



The rows of weak blocks under the post-fold timer encourage the player to DASH ATTACK, creating short instances of negative space, yadda yadda yadda. Red coins which fall out of the blocks at the end of each row behind Wario persuade the player to backtrack (risk/reward). From each section, the player can see the next, which readies them and creates a forward momentum (context setting). The vertically-arranged set of blocks can only be broken by JUMPING, adding to the game idea's assortment of mechanics. When off-screen, the final PET Bottle has a tendency to disappear and respawn to comedic effect².

2 Disappearing PET Bottle—<http://youtu.be/T89zwnFWwvc>



ROOM 1

Returning to Room 1, the frog block floor is removed so Puffy Wario can float up to the vortex. Because one of the Bow Balloons is to the immediate right of the ladder, it's easy for Wario to get hit by an arrow as soon as he reaches the surface, sending him upwards without the final jewel piece. The through platform prevents Wario from falling into the vortex if the player misses it on the ascent, forcing them to retry the arrangement. By raising the bar right near the end, the game squeezes more out of the player and builds the tension to a climax.

RUBY PASSAGE: 40 BELOW FRIDGE

LOWDOWN

Passage: Ruby Passage

Level Number: 3 of 4

Visual Theme: An industrial freezer

Game Idea: Snow and ice

Key Level Elements: Slopes, snow blocks, wire meshing, slippery surfaces

Folding: Reroute

Fold Measures: Frog blocks, height

Enemies: Yukiotos, Spearmen, Totsumen, Icicles, Snow Clumps

Number of Enemies: 17

Heart Medallion: No

Number of Floating Hearts: 9

INTRODUCTION

40 Below Fridge is a giant industrial freezer. The initial two rooms precede the icy interior with a continuation of The Curious Factory's conveyor platforms. Falling clumps of snow, snow blocks, Snowman Wario, Yukiotos, Frozen Wario, icicles, and slippery surfaces all debut, defining the wintry character of the level. The former three constitute one half of the game idea, snow, while the latter four constitute the other half, ice. The number of game elements pertinent to the game idea and the density of their application make 40 Below Fridge one of the richest levels in *Wario Land 4*.

Another notable aspect of 40 Below Fridge is its resourceful use of space. Rooms 2 and 7 are prime examples. Room 2 uses three interconnected lock and key arrangements to create a hub which Wario must pass through at least four times. Room 7 squeezes five optional arrangements into a single room.

The level's music CD is the strongest curiosity bait in the game. The silver chest is placed out in the open, in the centre of Room 2's hub, giving it maximum exposure. Despite the obvious location, figuring out how to reach the chest is another matter altogether. Even once the player knows how, the necessary time commitment can jeopardise their completion of the level. Talk about devious!

GAME IDEA

40 Below Fridge's game idea is snow and ice. In the snow arrangements, the clumps of falling snow turn Wario into Snowman Wario. The slopes then see Snowman Wario roll up into a snowball where he can break snow blocks. In the ice arrangements, the Yukiotos freeze Wario, sending him backwards in a paralysed state. The icicles halt horizontal movement, and icy floors give the player a slippage factor to deal with.

GAME IDEA TIMELINE

Snowball Rolling: Can't ROLL to avoid ice breaths, Snowman Wario and snow blocks introduction—Clumps of snow separated from slope, roll around a revolving room—Mix of optional snow block and regular block arrangements

Yukiotos: Introduction – Ice breath exploding on impact—Used in conjunction with meshing – Double attack from either side—Wide room extends the soft punishment, ice breath can be taken advantage of – Timing whilst CLIMBING

ROOM-BY-ROOM ANALYSIS

ROOM 1

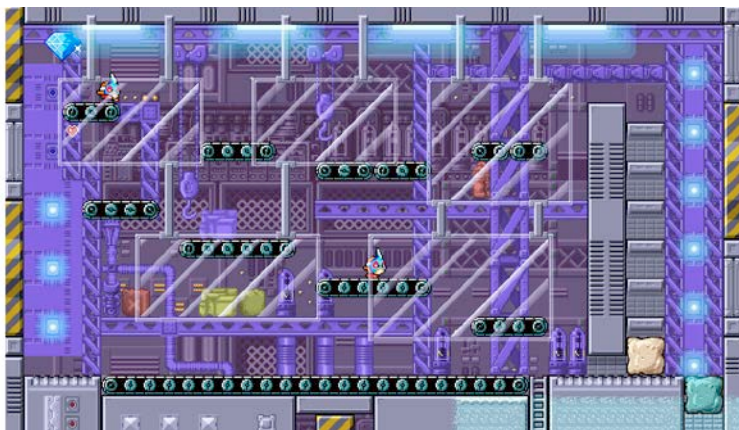


An empty room, aside from the ladder underneath which piques the player's interest. The frosting along the edges of the room indicate that the adjacent rooms are colder than Room 1.

ROOM 2

Wario enters the freezer. The terrain is frosted over, light snow falls on a foreground layer, and some floors are made slippery by the ice. Wario can only CLIMB the ladder. The silver chest is a curiosity marker.

ROOM 3



The two entranceways to Room 2 are frosted over. We now know that the frosting corresponds to the freezer rooms. The top of Room 1 isn't frozen as it borders Room 3. Following these clues, the player can deduce that the room below Room 1 must be part of the freezer.

Three levels into the passage and the warmer rooms have moved beyond simple Spearmen, block, and platform setups. Totsumen and conveyor belts replace Spearmen and platforms, while the staircase formation allows the player to minimise the increase in potential backtracking. The conveyor on the floor moves to the right so as to speed up backtracking. There's no need to punish the player too much so early on.



Wario jumping up to a platform to lure out a Totsumen

Because the platforms are at different heights and the Totsumen only charge at Wario when he's horizontally aligned, Wario needs to either be on or jump up to the height of the subsequent conveyor platform to lure the Totsumen out. Being on the platform puts Wario at risk as he's closer to the enemy and the player has less time to react. Considering the size of the platforms, it's reasonably likely that Wario will fall off or take damage in the ensuing kerfuffle. Jumping up to the adjacent platform requires the player steer Wario

away from and back onto the original conveyor platform. This technique minimises risk by drawing the Totsumen out from a distance. The player can express themselves by taking risk or being conservative.

Snagging the diamond is tricky as the neighbouring platform only has enough room for Wario and the Totsumen, leaving minimal time to react. The first Totsumen/conveyor arrangement gives the player an opportunity to lure the enemy out (practice). The second diamond arrangement makes it mandatory, if they're to collect the reward (test). The conveyor platform that Wario must stand on to lure out the second Totsumen pushes him to the right, putting the enemy off-screen. This obscures the information needed to make the jump, and thus: tests short-term memory skills, persuades the player to use the luring technique (as they can't see well enough to make a safe jump), and has them try to move Wario (to keep the Totsumen in view) and track the enemy at the same time.

The final platform consists of two mini-conveyors. The first moves to the left. The second moves to the right. Together they form a kicker where the player is likely to walk Wario off the platform because of the sudden change in traction and limited leeway to react.

ROOM 2



Room 2 is a prime example of maximising limited space. The snow blocks on the left prevent Wario from returning to the vortex. The snow clumps/slope combo needed to remove the snow blocks is locked behind frog blocks. The frog switch needed to remove the frog blocks is locked behind a snow block in Room 4. The snow clumps/slope combo needed to remove Room 4's snow block is several rooms away. That's three interconnected lock and key arrangements. Add in the silver chest and the room goes another two layers deep to a total of five arrangements.

The snow block in Room 4, pit underneath the snow blocks, and regular block in Room 2 redirect Wario through three looping routes. Those being:

- » Room 2 to Room 3 and back
- » Room 2 to Room 6 and back
- » Room 2 to Room 9 and back

And for the silver chest:

- » Room 2 to Room 3 and back
- » Room 2 to Room 9 and back
- » Room 2 to Room 9 and back (if the player forgets that they can directly return to Room 1)

If the player pursues the CD, then add “Room 2 to Room 3 and back” (break the block) and “Room 2 to Room 9 and back” (claim the CD) to the list. Further, if the player overlooks that after getting the CD, Wario can turn around and go back to Room 1 and instead exits through the pit, then you can add a third “Room 2 to Room 9 and back”. Overall, Wario will pass through Room 2 at least four times—six, possibly seven, if they’re interested in the silver chest.

The upper and left-hand arrangements are out of reach, which leaves the lower section available. This area can be broken into two parts. The first introduces ice and the second snow.

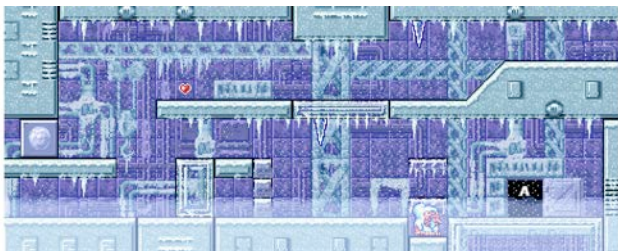
In the first section, if Wario touches the Yukiotoke’s ice breath, he’ll glide up the slope, hit the nearest snow block, and revert back. The elements are positioned so that the player learns first-hand that:

- » The ice breath turns Wario into Frozen Wario.
- » Frozen Wario glides backwards in a horizontal line.
- » Frozen Wario can glide up slopes.
- » The transformation ends when Wario hits a wall.
- » Frozen Wario can’t break snow blocks.

In the second section, because it’s not apparent that the clumps of falling snow are anything more than window dressing, the player will likely ROLL into the snow blocks and learn that doing so doesn’t break them. The only way through is to draw the connection between the falling clumps of snow and the snowball icon on the snow blocks (form fits function). (For some players though, the snow will just unexpectedly fall on Wario, and that’s fine too). Once transformed, all Wario needs to do is walk to the slope. With nothing on the floor to interact with and nowhere else to go, this step is foolproof. As with all later slope arrangements in the level, the education follows test teach test.

The slippery ice floors are implicitly introduced with a high pitch sound effect that informs the player when Wario's sliding on the ice. The transparent texture also distinguishes the ice from regular terrain. Slippery floors make it harder to avoid the Yukiotokos and clumps of snow, aiding in the education. On hard, the platform in the second area is occupied by a Yukiotoko.

ROOM 4



Room 4 branches out into two routes. The bottom path leads to Room 5. The top path, sealed up with snow blocks, threads the loop back to Room 2. The floating heart prompts the player to take the upper route so that they can see that it's cut off.

The Yukiotoko sits in a shallow trench where its ice breath projectiles hit the sides and dissipate into puffs of cold air. The platforms shield the enemy from overhead attacks. Wario needs to get up close to either attack or jump over the Yukiotoko. By making it easy for Wario to touch the puffs of cold air, the arrangement demonstrates that they still freeze him. The icy wall prevents Frozen Wario from sliding all the way back to Room 2.

Both routes feature icicles. The falling spires make a noise when they're about to drop, alerting the player beforehand. All game elements pertinent to the game idea have been introduced.

ROOM 5



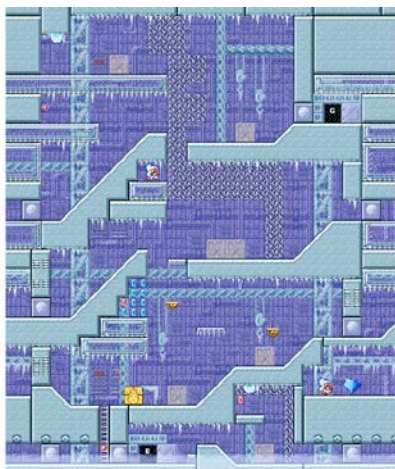
This multi-channeled room is a divergence from the game idea. As Wario explores one route, the contents of the neighbouring channels come into view. This gives the player the information they need to choose the next most appropriate path. The initial guesswork gives way to informed exploration.

The low ceilings shorten Wario's jumps so that to disarm the Spearmen, he must jump when they're closer to him. This puts a focus on reflex skills which makes the enemy feel more confrontational than usual.

The jewel piece chest visible from the entrance lures the player into the first channel. Putting the chest here suggests that the other channels may also hold rewards (context setting). If the player applies this logic to the second channel, they'll be rewarded with a diamond and spot another diamond and a floating heart in the channel below. This second diamond (in the third channel) is held in an enclosed space with a unit-high entrance. Wario needs to CROUCH fall into the gap. The floating heart invites the player onto the platform above which then encourages them to fall from the right and not from the left, minimising the risk of a mistake. The fourth channel returns Wario to the left-hand column. The fifth leads to the door, however, from it, the player can see the Keyzer in the channel below and is prompted to backtrack. On the way to the Keyzer, the player can see that the two channels below are empty, bar a floating heart, confirming that there's nothing else for them to explore.

A purple pipe is located at the bottom of the left-hand column, underneath some breakable terrain. Although visible when Wario's on the ground floor, the extended drop itself is a sufficient clue.

ROOM 6



The ground floor arrangement is a scaled down version of the area above. The key interactions and their order is identical in both arrangements:

- » Find the snow block and slope
- » Reach the wire meshing
- » CLIMB the mesh to the clumps of falling snow
- » Transform into Snowman Wario
- » Fall back down and walk to the slope
- » Roll through the snow blocks

The difference between the two arrangements is the distance between key game elements, number of enemies, and use of verticality to create soft punishment. The larger arrangement is punctuated with mini-arrangements, like navigating the moving platforms and avoiding the Yukiotoko whilst CLIMBING the mesh, which bulk up its size. By having a condensed version of an arrangement precede a more fleshed out version, the player enters the main arrangement already familiar with its structure. This allows them to focus on the mini-arrangements without stressing over the bigger picture. The first arrangement sets the context and scaffolds for the second.

Let's take a step back and explore the finer details. In the lower arrangement, the snow block is to the left of the door so that the player sees it upon Wario's entry and knows what their goal is right away. At the same time, the jewel piece chest is visible bait. The mesh is only a unit wide so that it resembles a ladder, making the player instantly familiar with the uncommon level element.

The shape of the meshing has them navigate one axis at a time. The red crystal draws them over. With the Yukiotoke visible from the mesh, the seed is planted for the secret room. The entranceway divides the slope and snow blocks as it forces the player to realise that the entrance on the right sends Wario to the entrance on the left, and vice versa.

In the upper arrangement, Wario needs to climb to the top, transform into Snowman Wario, fall all the way to the bottom, and roll off the left-hand slope. This sends him back around to the top, clearing a path to the door. Even with the familiar structure, it's still difficult to put all the pieces together as there are several mental barriers to overcome. Firstly, the key game elements are separated by great distances, so the player must explore for a while before everything clicks. Secondly, after transforming, Snowman Wario's return to the start seems counterproductive. Lastly, the solution has Snowman Wario roll up the slopes which contradicts the association of a snowball rolling downhill. To solve the larger arrangement, the player must overcome these minor subversions and think outside of the box.

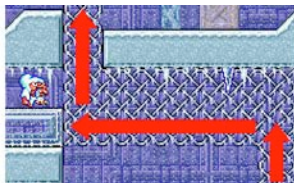
The jewel piece chest sits in the middle of the two slopes, preventing Wario from completing the room without the jewel piece.

The left-hand ledges are a unit higher than the right-hand ledges to prevent Snowman Wario from rolling to the left. This reduces the number of rolling paths, guiding the player towards the solution and minimising trial and error.

Room 6 employs pure fold folded level design. The clump of falling snow is the fold. Pre-fold, Wario must fight gravity to clear the platform and CLIMBING arrangements. Post-fold, his movement and the player's vertical leeway is limited. Gravity is the key dynamic.

Wario can ROLL through the wall to the left of the jewel piece chest to reach the secret area with the diamond. This arrangement tests knowledge skills as the player must make the logical connection between the relative positions of the two areas, despite their apparent separation. The gap behind the wall is a clue.

When Wario's on the ground, icicles off-screen can still fall on him. Having encountered several of them before, the sound effect should be a sufficient enough warning.



One of the icicles covers the top half of the meshing next to the Yukiotoke so as to keep Wario in the bottom half where he's safe from the enemy's projectiles. The ice breaths encourage the player to restrict Wario's movement to the horizontal axis, leading up to the ascent past the Yukiotoke. Lining Wario up so that he can CLIMB through the gap (it's easy to get caught a little to the right) and waiting until the Yukiotoke's back is turned ensure that the player won't have to repeat the mini-arrangement. The icicle, Yukiotoke, and narrow gap teach the player important problem solving skills. That is, to simplify an arrangement (by only CLIMBING along one axis at a time) and take early precautions (by moving Wario into position and waiting until the Yukiotoke's off guard before CLIMBING).

The meshing removes platforms so that Snowman Wario has a greater distance to fall, making his quake more pronounced and thus apparent to the player.

ROOM 7



Room 7 expands into freer practice with a crisscross of six Snowman Wario and regular ROLL arrangements. Only one of the arrangements leads back to Room 4. The rest are all optional. The challenge then involves threading together snow, slopes, (snow) blocks, and platforms to find pathways into the different reward-containing areas. Or, if the player isn't interested in rewards, then the most direct route through the bottom set of snow blocks. Several of the rewards can be seen from the outside, acting as motivation for the player to reverse-engineer a way in. When claiming a reward, adjacent areas come into view to continue the cycle of baiting. The player's initial success is used to build momentum towards a continual pursuit of optional challenges. The Snowman Wario arrangement leading back to Room 4 is similar to Room 6's two arrangements as it involves falling to reach the slope.

The jewel piece chest is put in the path of the snow blocks for the same reason as the previous chest.

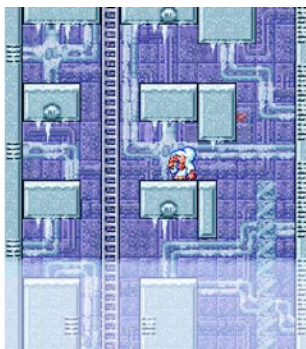
THE FOLD

Another reroute, as with the other levels in the passage so far. Frog blocks cut off the chain from Room 2 to Room 7, while granting access to the tools to open up the Room 2 to Room 9 chain. Height prevents Wario from returning to Room 3 from the right-hand side. If there were no frog blocks, Snowman Wario could roll from Room 7 to Room 8, passing through Rooms 2 and 4 without stopping.

ROOM 2

With the frog blocks gone, Wario can finally remove the snow blocks. Since the left-most snow block is above the pit, on clearing the obstacles, Wario falls down into Room 8 without a chance to claim the CD.

ROOM 8



The sheer faces stray to the left and are only 2 units apart to prevent Wario from circumventing Room 9.

ROOM 9



The cracked ice blocks, whose spoils are visible on the outside, make their only appearance in Room 9. The row of blocks and post-fold timer persuade the player to DASH ATTACK. By setting the context in the first row, come the second, the player's likely to DASH ATTACK through the lower layer of blocks, where they can easily get a run-up. This releases the Yukiotos. If the player's gunning for the CD, then on their return, the enemies will be in a prime position to send Wario to the wall. The player's role in their own potential time-wasting breeds tension. The length of the room exacerbates the ice breaths' soft punishment. On the second floor, Wario can use the Yukiotos to glide to the end.

ROOM 8

The Yukiotos adds a time factor to CLIMBING the ladder. There are three of them on hand.

RUBY PASSAGE: PINBALL ZONE

LOWDOWN

Passage: Ruby Passage

Level Number: 4 of 4

Visual Theme: Pinball machine

Game Idea: Pinball machine, loading pinballs into catchers

Key Level Elements: Pinballs, catchers

Folding: Skirting along the fold

Fold Measures: Height, door suspended in mid-air

Enemies: Ringosukis, Yukiotos, Hammerheads, Sparkies, Spark Boxes

Number of Enemies: 5 (not including Hammerheads or Sparkies)

Heart Medallion: In puzzle room

Number of Floating Hearts: 8

INTRODUCTION

Pinball Zone is a giant pinball machine with a back and front board. The back board is the machine's interior where Wario loads pinballs into catchers to advance. These rooms are punctuated by brief front board divergences along the face of the pinball table where Hammerheads are common. Wario begins at the base of the machine and eventually reaches the top, ROLLING back down to the vortex post-fold.

The level resembles a real pinball machine. Tiled, brightly-coloured wallpaper covers both sides of the unit with an earth red to night-sky purple transition from base to head. The face of the table sports arrows, lightning bolts, and whizz-bang text exclamations. The round-cornered, rectangular shapes of the rooms mimic the play area, while the Hammerheads look like bumpers.

Since the front board is one giant room broken into smaller segments, I've labelled each section as a decimal of Room 1. This should create a distinction between the front and back board rooms. The individual areas are close enough that the player can make out that they're connected, but far enough apart that they can't see how exactly they click together. Piecing together the full picture drives the player's interest in the level and leads to a surprising "*ah, ha!*" finish when the entire room's finally revealed.

The rooms labelled as full integers are the back board rooms. The pinballs are keys and the catchers are locks. When all four pinballs are thrown into catchers, the master lock is removed and Wario can proceed to the subsequent front board room. Both game elements explode after they receive their quota of pinballs. Catchers drop silver coins and master locks drop gold coins. The player needs to bring them into screen view to prompt their detonation. Although it's somewhat artificial that the catchers and master locks only disappear after a condition unrelated to their in-game state is met, the requirement allows the player to see where the spoils fall and grab them before they disappear. It also adds an extra layer of interplay. The full interplay cycle between Wario and the catchers (the master lock's interplay is relatively similar) is presented below.

Wario throws pinball -> catcher holds the pinball and sits on standby
-> Wario brings catcher into view -> catcher explodes and drops spoils -> Wario collects spoils

The arrangements in Rooms 6 and 7 tease out the "Wario brings catcher into view" step to great effect.

In Pinball Zone, Wario doesn't progress from left to right, so the player can't rely on the exit door always being at the opposite end of the room. The catchers and master locks both produce sound effects when they explode as part of their feedback. When Wario's near the master lock, its spoils and noticeably more audible sound effect direct the player's attention to the exit door, helping them make a smooth transition to the next room. For consistency, the exit door is usually placed in an enclosed area above the entrance.

The pinballs, catchers, and master locks provide the framework for platforming and throwing exercises with an emphasis on alignment, predicting trajectories, and different types of throws. Although the placement of catchers elicits particular throws/throw + other mechanic combos, the player usually has the freedom to put the pinballs into the catchers any way they like. This includes not using the throw mechanics.

Since the pinballs are keys, if the player makes a bad throw or the pinball is accidentally knocked out of Wario's hands, the player must retrieve it. This organic form of punishment persuades the player to throw better and be more careful with the pinballs.

Every back board room uses the same four-pinballs-four-catchers structure. The consistent template allows the player to concentrate on the mini-arrangements which sit between the locks and keys, fleshing out the overall task.

Pinball Zone not only has the greatest number of fully-featured arrangements

on the one game idea of all the levels, but it's also the largest level in the game in terms of space and number of rooms.

GAME IDEA

Pinball Zone emulates pinball, with Wario nabbing balls and putting them into catchers—that much should be obvious by now. The game idea develops through the changing positions of the catchers, which elicit different interactions, and the mini-arrangements, which flesh out the process of bringing pinballs to their catchers. Post-fold, Wario becomes a pinball and ROLLS from the top of the front board down into the vortex at the bottom. This is perhaps a metaphor for the final ball falling through the outlane.

GAME IDEA TIMELINE

Pinballs: Vertical and horizontal THROWS, CHARGE THROWS – Throwing while on moving platforms, quaking the ground to bump pinballs – Quaking pinballs into catchers—Holding pinballs while navigating platforms and enemies – Removing catchers with pinballs by bringing them into screen view—Prior arrangements combined

ROOM-BY-ROOM ANALYSIS

ROOM 1.1



The level begins at the front of the pinball machine. The channel which returns Wario to the vortex post-fold is briefly in view as he enters, kick-starting the player's gradual realisation of the interconnected nature of the front board. The text and lightning bolts in the background imply that the Hammerheads are active. The notification is necessary given that they

could be mistaken as contextual window dressing. Meshing returns from the prior level, and its application is extended throughout Pinball Zone. Its form encourages the player to tackle one axis at a time. The Hammerheads' Spiky Ball projectiles add a timing and knowledge aspect to the CLIMBING.

ROOM 2



Vertical THROWS and horizontal CHARGE THROWS are the focus of this initial, distraction-free back board room. The catchers at the top require vertical THROWS. The catchers on the sides require horizontal CHARGE THROWS. The top-right catcher, being to the side of the platform and facing up, demonstrates how the trajectory of vertical THROWS slant in the direction Wario faces, as opposed to being straight vertical lines. The top-left catcher is low enough that the skew is negligible.

The lights pave out the throwing trajectories to assist the player. When Wario stands on the second or fifth platform from the floor, the pinball in his hand aligns either horizontally or vertically with a path of lights.

The small room size and master lock's position in the centre ensure that no matter where Wario moves, the lock is always within view. This way, when the four pinballs have entered the catchers, the player can see the master lock disappear, increasing the likelihood that they'll notice the relationship between the two elements.

ROOM 1.2



The jewel piece chest is trapped in an enclosed area. As established in The Toxic Landfill, when a reward or visual clue is behind a wall, seemingly inaccessible, breakable terrain is probably involved. The contained arrangement offers only three potential openings (underneath, the left-, and right-hand walls), so trial and error is kept to a minimum.

ROOM 3



Room 3 expands on Room 2 by:

- » Increasing the size of the room
- » Distancing the pinballs from the catchers by putting them in the four corners of the room
- » Securing the pinballs behind locks to create mini-arrangements
- » Adding moving and on/off platforms
- » Adding secret areas

Together, these small changes create significant variation which develops the game idea.

The pinball in the bottom-right corner is trapped behind breakable terrain, similar to the prior room which sets the context. The two arrangements are so close to reinforce that breakable terrain is only present when the game indicates so with a clue.

The unit blocks with floating hearts underneath seem out of place. The hearts encourage the player to SMASH ATTACK the blocks, which in turn knocks

the pinballs off their perches. At this stage, the player doesn't need to know that the pinballs bounce in the direction Wario faces when he level 1 quakes. The platforms are small enough that any vibration knocks the pinballs off.

The increased distance between Wario and the catchers necessitates CHARGE THROWS and JUMPING and THROWING (also includes full JUMPING to push the pinball into the catcher). The former takes time, to build the charge and wait for the moving platform to align Wario with the catcher, but the trajectory is fixed and therefore reliable. The latter is quicker, as Wario can JUMP directly up to the catcher, but risky, because the pinball can bump into the side of the catcher and fall. The two approaches are balanced on opposite ends of the risk/reward spectrum.

The increased distance between Wario and the catchers *also* makes the slanted trajectory more pronounced, forcing the player to factor the skew into their vertical throws. CHARGE THROW and the moving platforms add time elements to the arrangements: the time it takes to charge the throw and the time it takes for the platform to align the pinball with the catcher. The opening and closing of the catchers' orange beak is another time element. JUMPING and THROWING requires the player engage with gravity, the JUMP'S timing, and the space around the pinball and catcher. All in all, depending on their approach, there are seven variables that the player may have to consider when throwing a pinball into one of the catchers: the slanting trajectory (space), the charging time (time), the moving platforms (space and time), the catcher's orange nippers (time), gravity, the timing of the JUMP (time), and the space between the game elements (space). These variables make the throwing arrangements highly engaging.

CHARGE THROW compliments the moving platforms as when the platforms dealign the pinball from the catcher, the player can fill the negative space by building the charge.

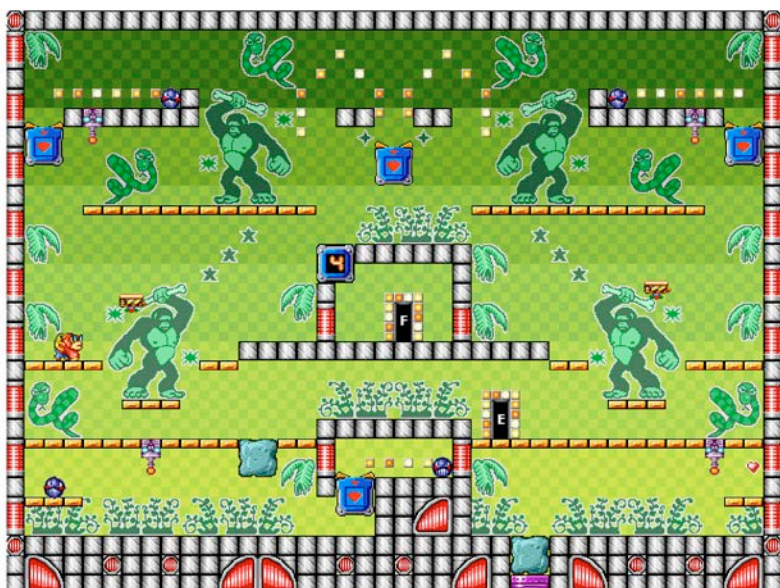
There are two secrets, one on either side of the room. Both require observation skills.

ROOM 1.3



Room 1.3 brings meshing to its peak application with the Hammerheads' projectiles leading the player to quickly move between axes in an open area. The Spiky Balls are slow and move in predictable, fixed patterns so as to match Wario's slower CLIMBING speed and provide a fair challenge.

ROOM 4

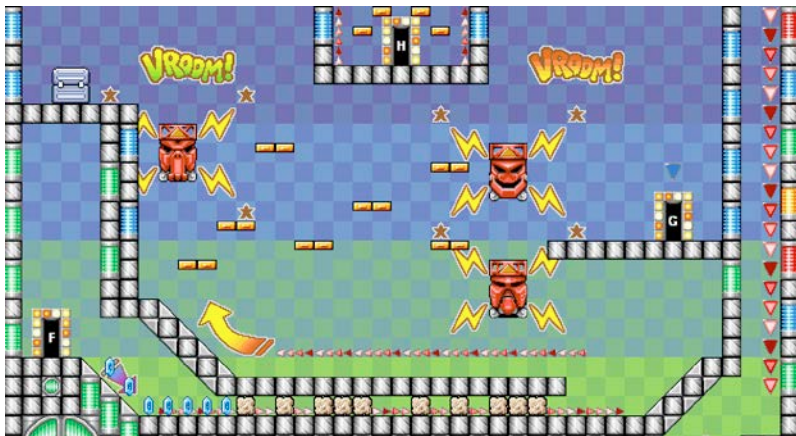


The upper-left and upper-right arrangements guide the player to realise that when Wario SMASH ATTACKS the ground (level 1 quake), the pinballs bounce in the direction he faces. The lower arrangement and pinball for the

upper-middle catcher are locked behind a thick block. With limited height above the block, the player must remove it with Fat Wario. Doing so drops him next to the lower arrangement. The setup makes the player inclined to use Fat Wario to bring the pinball to the catcher. By taking advantage of the situation the game so conveniently puts them in, the player learns that Fat Wario's level 2 quake makes the pinball bounce around without consistent direction. The upper and lower arrangements form a point of contrast which helps the player differentiate the two quakes.

The Ringosuki doubles as an aid and an obstacle. The enemy helps Wario break the thick block, but obstructs his path to the upper section. The floating heart underneath the through platform floor persuades the player to find a way into the area below. After knocking the lower pinball into the catcher, Wario can clear the neighbouring wall. Building off of the other breakable terrain arrangements, the clue is less obvious and further away from the entry point.

ROOM 1.4



The CD chest is surprisingly easy to reach. Since the Hammerheads double as platforms, the player needs to be wary of the Spiky Balls that can spawn up beneath Wario.

ROOM 5



The Yukiotokos, distance, and breakable terrain between pinballs and catchers shift the focus to navigating and clearing terrain with the pinballs.

When Wario enters, the four pinballs are contained within screen view. Their convenient proximity convinces the player to PICK one UP before they continue. The player must be cautious of the Yukiotoko on the left and either paralyse, destroy, or move past it when it's closer to the wall (more reaction time). The crystals persuade the player to JUMP and THROW. The moving platform in the upper arrangement dangles Wario in front of the Yukiotoko. Entering from underneath forces the player to directly confront the ice breaths. Both Yukiotokos test timing and reflex. Holding a pinball whilst avoiding their attacks increases engagement.

After the two interior catchers are cleared, observation skills are called upon to find the two exterior catchers locked behind breakable terrain. What was optional in prior arrangements is mandatory now. Both catchers plug gaps in the walls, acting as clues themselves. They minimise the area of search and thereby draw the player to the follow-up hints: a unit gap and a pair of Spark Boxes lacking antennas. Using the Spark Boxes as clues pre-fold foreshadows their activation post-fold.

The camera's bounding box sits within the central frame to conceal the left- and right-hand areas, but not the lower section (it's not necessary given the lack of visual leeway below Wario). Because the left-hand side lacks exterior clues, few players are likely to claim the secret diamond.

ROOM 1.5



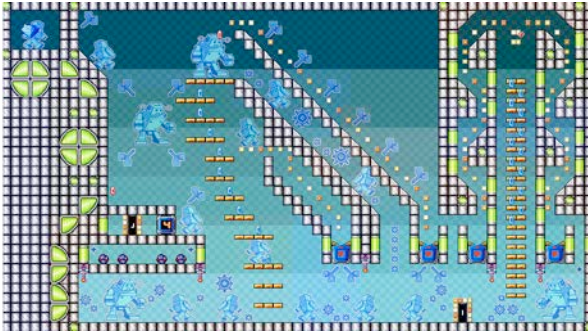
The player can see the frog switch as Wario ascends the platforms, so landing on it shouldn't come as a surprise. The two unit blocks of breakable terrain above the right-hand Hammerhead, which break the symmetrical pattern, lead out to a diamond (not in the image).

THE FOLD

After completing several more rooms, Wario reaches the top of the pinball machine where the nature of the fold is finally revealed. A series of slopes, vertical drops, and narrow channels demonstrate how the individual areas of the front board are connected. The curiosity comes full circle.

The timer adds a new dynamic to the pinball machine game idea, of which the arrangements draw upon to build tension. Height and a door without grounding prevent the player from backtracking.

ROOM 6



The pinballs are separated from the catchers by a long floor, which creates a natural tension. When Wario carries the pinballs from their resting place to the catchers, the player can't do anything to speed up the process, but press down on the d-pad to move Wario along the floor. This negative space of inaction under the timer makes the countdown more apparent, and thereby builds stress.

The same philosophy governs the spacing of platforms. On the left, they're far enough apart that, as Wario full JUMPS up onto them, there's a short period of negative space at the apex of the JUMP where Wario briefly holds his vertical position and then lands. During this time, the player can only wait for Wario to fall. Repeated over several platforms, the pockets of inactivity become more pronounced. The combined effect is likely to leave the player feeling inadequate.

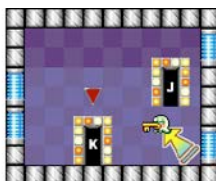
On the right, the platforms are close together so that they undercut the JUMPS closer to the apex, thereby reducing negative space. No matter the height of the JUMP, the platforms ensure that Wario will hold a higher vertical position. In this sense, any effort is rewarded. The platforms therefore encourage the player to JUMP, creating a forward momentum. They also catch the pinballs earlier if Wario drops them. The combined effect is likely to make the player feel empowered.

Unlike previous arrangements, the area Wario throws the pinballs from is far from the catchers in which they land. The distance keeps the catchers off-screen so that the player must bring them into view for the pinball's entry to register. The interaction becomes a two-step process, drawing on the level element's interplay. The extra step unexpectedly lengthens the arrangement, which feeds back into the tension. The catchers are visible from the floor, the room's junction, so that the player naturally brings them into view by way of completing the arrangement.

The pinballs can land off-centre, next to the catchers' nippers, eliciting a SMASH ATTACK to quake them in. This minor detail draws on Room 4's quake-based arrangements.

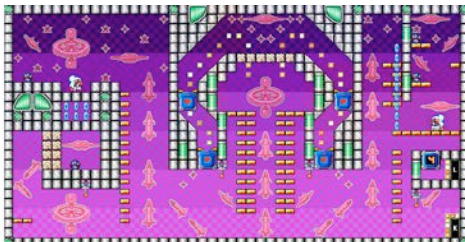
On the left, the trajectory lights and red crystal tell the player to throw the pinballs into the upper and lower channels and not down the centre. Wario can DASH ATTACK JUMP from the platforms over into the top-left wall to claim the diamond. The slope and lower red crystal are too obscurely-placed to act as sufficient clues. The crystal should be suspended in mid-air between the slope and platforms.

ROOM 1.6



Wario gets the Keyzer.

ROOM 7



This final room consolidates quakes, Yukiotos, breakable terrain, ice breaths, and platform spacing into the one arrangement. The door to Room 1 is between the entrance and right-hand pair of pinballs so that Wario must pass the door, allowing the player to make a mental bookmark of its location (information retention). The crystals are packed in close to strengthen their pull and thereby bring the player up to where they can see the pinballs. The Yukiotos are placed between the two sections so that Wario must cross the enemy at least twice.

On the left, the Yukiotos's ice breath catches on the edges, creating a barrier between Wario and the enemy. The crystals under the floor indicate that it's breakable. As with the right-hand arrangement, the platforms are narrow and

far enough from the opposite wall that Wario can't land back on them after breaking out of the Frozen Wario transformation (increases soft punishment).

In the central area, the catchers are either in frame from the throwing platform or Wario passes them on the way out. The extra step of interplay is downplayed.

ROOM 1

With all the pinballs loaded into the machine, Wario can leave. Zipping past the front board rooms reminds the player of their journey to the top of the table.

TOPAZ PASSAGE: TOY BLOCK TOWER

LOWDOWN

Passage: Topaz Passage

Level Number: 1 of 4

Visual Theme: A tower made of blocks

Game Idea: Sequence puzzles

Key Level Elements: Regular blocks, cat blocks, fire blocks, shape blocks

Folding: Reroute

Fold Measures: Frog blocks, pipe

Enemies: Toy Cars, Pig Head Statues

Number of Enemies: 21

Heart Medallion: In puzzle room

Number of Floating Hearts: 2

INTRODUCTION

Toy Block Tower kicks off Topaz Passage's toy theme with a tower made of playing blocks. The red and purple colour scheme, Cheshire cat grin of the cat blocks, structure and arrangement of the first six rooms, and king, queen, and knight figures in Room 1 establish the *Alice in Wonderland*-esque setting.

Cat blocks, which respawn when Wario re-enters a room, are used to construct sequence puzzles where the player must destroy blocks in a specific order. These types of arrangements are only possible because the cat blocks allow the player to retry if they make a mistake. Since cat blocks are exclusive to Toy Block Tower, so too are sequence puzzles.

As most arrangements are optional and Toy Cars, a variant of the already familiar Spearmen, are the only active enemies in the level, there's potentially little gameplay for the player to engage with. For better or worse, authority is taken away from the game designer and given to the player.

GAME IDEA

The sequence puzzles are isolated, optional, and lack a cohesive theme. The shape block and key hole arrangements are typical move-key-to-lock affairs.

Concealment and Flaming Wario make fleeting appearances. Coming off of the Ruby Passage, whose game ideas are coherent and richly-layered, Toy Block Tower's mixture of undercooked arrangements feels half-hearted

GAME IDEA TIMELINE

Sequence Puzzles: Each arrangement is independent, so the game idea never evolves.

Flaming Wario: Three touch rule introduced – A freer application of the rule

ROOM-BY-ROOM ANALYSIS

ROOM 1



Sitting between the vortex and wall of blocks, the triangle block is given prominence. Its form indicates that it belongs in the keyhole. The placement of the cat block below the (blue) square block ensures that the player can't pass until they understand that cat blocks function like regular blocks and shape blocks are affected by gravity (square block's fall).

ROOM 2



The staircase formation encourages the player to jump up to the triangle block. Doing so knocks the shape block, causing it to fall and possibly collide with and break the regular blocks below. In this subtle way, the arrangement can remind the player of the shape blocks' weight and how such weighty objects destroy blocks on impact.

The cat blocks, regular blocks, and shape block lock, as means of denying free access to the doors, make the exits appear important. Their precedence sparks a curiosity which tempts the player to enter them. In reality, the doors

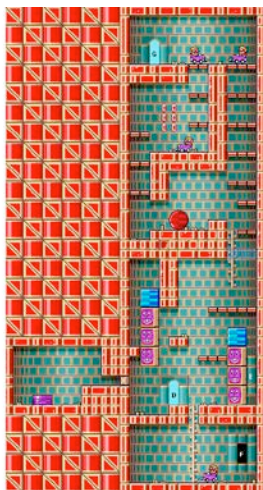
and the room they lead to (Room 3) are an excuse for the player to leave and re-enter Room 2, where they'll likely notice the newly-respawned cat blocks. The first three rooms are tutorials for the exclusive level elements.

ROOM 3



When Wario's to the near left of the circle block, the red and blue crystals are in view. The bait prompts the player to experiment and in turn realise that the block can be pushed with ATTACK. Once through, they can use the circle as a platform to reach the crystals. The player is taught to treat game elements as multifunctional.

ROOM 4



By clearing the cat blocks to form the first platform, the player unintentionally opens access to Room 4.5. The room contains a jewel piece chest and loops back to the bottom of Room 4. The pull of discovery is much stronger than the pull of curiosity. Therefore, the sly placement of Room 4.5's door is a much more effective way of demonstrating the respawning property of the cat blocks than Room 2's interest-arousing blocks. Room 4 is a fail-proof take on the game idea as the player can't help but discover Room 4.5.

The cat blocks on the left hold up a blue block which provides access to the purple pipe. The bounding box conceals the other side of the wall, leaving the unit block as the sole clue.

Above, the circle block arrangement is repeated.

ROOM 5



The first actual sequence puzzle. The crystals give the player a reason to break the cat blocks in order and make use of their respawn. Wario needs to break the top and bottom cat blocks. To avoid accidentally breaking the middle block, the player must ATTACK JUMP so that Wario's body is adjacent to the bottom half of the square block and top half of the cat block. Wario breaks the cat block even though only half of his body makes contact with it. This is one of the few arrangements that has the player consciously consider hit boxes.

ROOM 6



Another two sequence puzzles, both of which highlight properties of the DASH ATTACK. On the left, the thick block's sparkle suggests that, like in [Room 8 of the Hall of Hieroglyphs](#), a diamond is hidden behind it. The player can make a running path by breaking the regular blocks. Despite the unit gaps between the square blocks, the stretch is the only viable means for a run-up. By leaving the player with no other options, the arrangement leads them to realise that Wario can DASH ATTACK over unit gaps. Wario enters the room too far to the right to HEIGHTENED SMASH ATTACK the thick block.

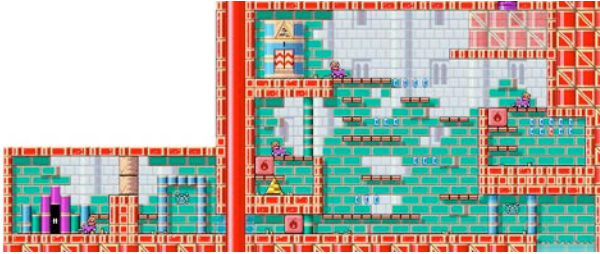
On the right, allowing the player to see the reward before the challenge makes them more willing to try the arrangement. Depending on whether the player ATTACKS or DASH ATTACKS, the bottom row of blocks either slows them down, which may get them thinking about the solution to the upper arrangement, or sets the context for the DASH ATTACK. Wario can't reach the crystals by ATTACKING the cat blocks, because the square blocks fall as he bounces back. DASH ATTACK has no bounce back, but there's not enough room for a run-up. Similar to Room 6.5 in Monsoon Jungle, the only way the player can complete the arrangement is if they realise that DASH ATTACK'S charge is maintained between jumps.

Through the two arrangements, the player's reminded of three of the DASH ATTACK'S properties:

- » It can be performed over unit gaps.
- » It doesn't cause Wario to bounce back after breaking regular blocks.
- » Its charge is maintained between momentum jumps.

Regular blocks are used on the left as there's no fail state, while cat blocks are used on the right as there is a fail state.

ROOM 7



The game idea shifts to Flaming Wario's three touch rule. The first arrangement is a restricted tutorial. The pig head spits fire onto the ground. If Wario's facing right when he touches the fire, which is likely given that he enters from the left, Flaming Wario will bounce off the fire block (first touch), hit the back wall (second touch), and then combust on touching the fire block a second time (third touch), destroying it on impact. If Wario's facing left, Flaming Wario will combust at the back wall. Each time Flaming Wario touches a wall, his flames grow larger. His form helps the player become aware of the three touch rule.

In the main arrangement, the pool of water prevents Flaming Wario from running back and forth along the floor if the player misses the first platform or allows Wario to transform when facing right on the right-hand side. The triangle block, the key to the door, is locked behind a fire block. To remove the fire block, the player needs to guide Flaming Wario up the platforms. Flaming Wario's run puts an emphasis on reflex, while waiting for him to reach the right position to jump requires timing skills. The automatic movement eases dexterity. The platforms are wider than usual to provide the player with enough leeway to react.

The right-hand fire block locks away a cache of crystals. To claim the reward, the player must remove one wall touch from the previous run so that Flaming Wario can bounce off the wall near the triangle key and head right. By starting from the initial pig head statue, Wario avoids the wall next to the lowest platform, but must make two jumps in quick succession. The optional arrangement requires the player demonstrate a conscious understanding

of the three touch rule. This involves surveying the area, drawing mental lines between the walls, and manually counting the touches. On hard, this arrangement is mandatory as the triangle key trades places with the crystals.

The upper-right ledge tips the player off to the concealed area. Only a DASH ATTACK JUMP can clear the gap. Because of the ledge's distance from the platforms, many players will likely overlook the purple pipe.

ROOM 8



Another sequence puzzle. Height is the lock, cat blocks are the keys, but there are too many of them. Break two on the left and one on the right.

ROOM 9



The jewel piece chest obstructs the path to the fire block so that if the player lets Wario transform before surveying the area, they'll need to either jump the chest and claim the jewel piece later or exit the transformation, nab the jewel piece, and try again. The regular block covers a door to a bonus room. The player needs to be careful not to break the cat block beneath it, otherwise they'll have to re-enter the room post-fold. Since the platform back to the door is made of frog blocks, time is the punishment for a lack of care with the previous arrangements.

THE FOLD

The reroute leads Wario down the central pipe to the tower's basement and then to Room 4.5 where the player can retrieve the jewel piece if they missed it pre-fold. Rooms 4, 7, and 8 employ frog blocks. Room 7's frog blocks, at either side of the pipe, are unnecessary given the blocks in Room 8. Their presence suggests that the pipe isn't on its own layer, as implied visually, but rather it's just a vertical drop with the frog blocks filling the gaps in the walls.

ROOM 8

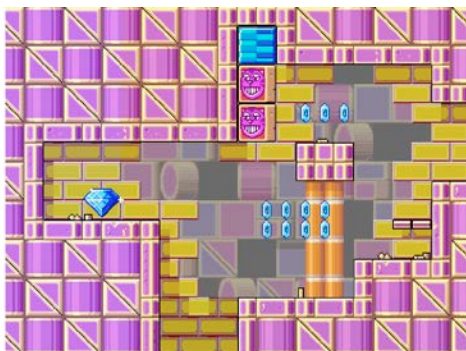
The left-hand arrangement's similarity to the right-hand arrangement persuades the player to use their knowledge of the latter to solve the former, even though the solutions are different. The pre-fold arrangement acts as a red herring. The mixup subverts the player's knowledge. To solve, break two blocks on the left. In the middle, the mystery of the foregrounded pipe is revealed.

ROOM 10



Wario lands on the jewel piece chest so that the player can't miss it. The crystals tempt the player to leap before they look. On normal, for some bizarre reason, the left-hand arrangement is solved. On hard, a circle block on the top platform replaces the square block. The player needs to push the circle into the empty hole.

ROOM 11



The crystals once again grab the player's attention, leading them to the cat blocks they need to break to reach the diamond.

ROOM 12



Wario can enter Room 12 from either of the prior two rooms. The locked door arrangement combines the circle and triangle blocks together. The CD is the reward. The diamond is visible from the block-filled corridor to tempt the player to try the upper arrangement (risk/reward). From Room 12, the pipe leads to Room 4.5 for a final sprint to the finish.

TOPAZ PASSAGE: THE BIG BOARD

LOWDOWN

Passage: Topaz Passage

Level Number: 2 of 4

Visual Theme: Cartoon world

Game Idea: Board game

Key Level Elements: Board, dice switches, GET! signs

Folding: Pure fold

Fold Measures: Frog blocks, crystal outlines

Enemies: Toy Cars, Harmen, Harimenzetto, Dice Men

Number of Enemies: 26

Heart Medallion: In puzzle room

Number of Floating Hearts: 7

INTRODUCTION

In The Big Board, board game elements are fitted to optional lock and key arrangements. Contextually, these elements simulate the rolling of a dice and Wario's movement along a non-existent board. Functionally, they act as reflex testers that reward the player with the means to participate in the arrangements, adding an initial step of interaction. By rolling the right number and using the reward to solve the arrangement, the player can snag a free diamond. On normal, the arrangements are entirely optional. On hard though, the diamonds are replaced with jewel piece chests which make participation and decent reflex skills mandatory. Come post-fold, the player must reach the end of the board. For players who wagged the arrangements pre-fold, this means traversing the entire board in one go post-fold. The scalable punishment is one of *Wario Land 4*'s best post-fold twists.

GAME IDEA

Each room contains at least one dice switch and a flagpole with a GET! sign at the top. As Wario walks towards a dice switch, a line of icons (also called squares) appears on-screen. This line is the board. Flicking the switch to stop the revolving set of numbers is the dice roll. The player can only roll each dice once. Landing on the icons causes different things to happen,

such as enemies spawning or Wario being struck by lightning. The icon at the top of the flagpole, the GET! square, is the target square for the respective room. Landing on it provides the means for the player to participate in the arrangement. The Wario icon transforms Wario into a room-specific form.

GAME IDEA TIMELINE

Board game: All available squares are GET! squares – The carryover of board effects are introduced – Half of the available squares are GET! squares – Less than a quarter of the available squares are GET! squares – Reminder of the carryover of board effects – Claiming rewards is tiered – Rolling correctly twice makes reaching the reward easier – Three different avenues for using the board effects: two wrong, one right – Get a goal.

ROOM-BY-ROOM ANALYSIS

ROOM 1



Room 1 warms the player into gameplay and establishes the appearance of blocks and terrain. The three blocks are arranged like a podium. Putting the Toy Car on top gives it stature. This precedence persuades the player to topple the enemy, however, because Wario must approach it from below, it constantly changes direction, and there's limited standing room on the block, it's easy for Wario to nip the Toy Car's spike on the way up.

ROOM 2



The game idea is introduced in a restricted form. The wall and unit blocks on the right ensure that Wario can only pass by activating the pink block outlines. There's just one dice switch, and the first six icons on the board all fill the outlines. This fail-safe enables the player to understand how the board game works through their own participation. The crystals above the platforms reward the player for rolling the dice, reinforcing the action with positive psychology.

The room is only a screen tall as scrolling to show an empty sky would only unnecessarily distract the player.

ROOM 3



The pink solid blocks are positioned in the centre of the arrangement so that the player can clearly see that the board's effects continue from room to room. The screen-tall bounding box conceals the crystals and floating hearts in the area above. The yellow platform is the clue that breaks the divide. The frog block outlines disable the upper area post-fold so as to focus the level design on the sprint to the vortex.

ROOM 4



The arrangements from Rooms 4 to 10 are all optional. So that the player doesn't just walk through the level though, these rooms subtly try to convince them to participate in the arrangements.

As Wario enters the main area, the diamond and fire blocks are in view at the top of the screen. The gap in the floor and raised curve in the ceiling elicit the player to jump so that the presence of the diamond is further pronounced. Later, if the player explores the underground area, they may

return up through the through platform and once again bring the diamond into focus. The layout tempts the player with the bait.

Similar to the entrance, the raised slab (circled in the image) gets the player to bring the yellow platforms into clearer view. By the time Wario reaches the flag pole, the player's already familiar with the reward and the means of getting it. Given this context, it shouldn't be a stretch for them to associate the Wario icon at the top of the flag pole with the Flaming Wario transformation needed to reach the diamond.

Half of the six potential icons Wario can roll after the initial six pink block squares are Wario heads. The failure rate is kept low to ease the player in. After Wario transforms, he needs to ascend the two yellow platforms. The raised slab on the floor and low hang at the entrance's mouth (also circled) make it difficult for Flaming Wario to run back to the prior room. The unit drop on the upper ledge catches Flaming Wario so that he invariably combusts next to the flame blocks. The low wall on the right offers the player a second chance at the platforms.

After rolling a Wario head, the player can press the d-pad to determine which direction Wario will face when transformed. This is useful for redirecting Flaming Wario.

If the player can't reach the diamond, then they only miss out on a reward. The player isn't severely punished as the game doesn't want to dissuade them from trying later arrangements.

The line of crystals in between the solid block platforms encourages the player to use the dice switches as platforms. The arrangement foreshadows a similar setup in Room 5. Toy Cars sit on the platforms so that if Wario lands on an outline square, the platforms disappear and the enemies trap him.

The crystals at the opening of the underground channel lure the player inside. The frog switch activates the crystal outlines, so for now they're curiosity markers which remind the player to take the underground route post-fold. The player can reach the puzzle room pipe in Room 5 by breaking the wall on the right. The clues are in Room 5. This is one of the only arrangements which extends over two rooms and isn't based around the transformations.

Because it's now possible for the player to land on a non-GET! square, an extra dice switch is added to offer a second chance.



The trees in the background of the first four rooms are identical to the fruit and spruce trees you find in Lego sets.

ROOM 5



Room 5 follows the same template as Room 4, except:

- » To claim the diamond, Wario must land on an enemy icon and then use the Dice Men to floss out the channel of unit blocks.
- » There are even fewer GET! icons on the subsequent part of the board.
- » Lightning and diamond icons are introduced (risk/reward and scalable difficulty).

The crystals above the dice switches and platform to the left are a continuation of the similar arrangement in Room 4. This time though, the player *must* use the dice switches as platforms, otherwise they can't reach the crystals.

The through platform prevents the player from crossing the room post-fold as they did pre-fold. The frog block outlines pave the way for the overhead route. The crystal outlines provide the persuasion.

ROOM 6



Room 6 is a repeat of Room 3, but since the player already knows that the board game effects cover the entire level, it's more of an intermission.

ROOM 7



The diamond is underground and well out of sight. Between Wario and the diamond is an area filled with Harimenzetto. The enemies' rarity and high-value spoils attract the player's attention. The drop onto the yellow platform brings them into view. The curve in the ceiling reveals more blue crystals. A thick block covers the entrance. Once again, the layout preps the player to tackle the arrangement.

Depending on the player's previous dice rolls, there should be one to three transformation icons in front of Wario on the board.

The yellow platform above the thick block prevents Wario from HEIGHTENED SMASH ATTACKING his way in. After clearing the block, the player needs to be careful that, in pursuing the Harimenzetto, they don't move Fat Wario around too much before breaking the second thick block, otherwise he'll prematurely revert back to normal. The channel's length and the Harimenzetto's slow walk make such a potential mistake opportune. It's preferable then to wait for the Harimenzetto to come to Wario. The arrangement elicits patience. The crystals and bump in the ceiling tell the player to jump on the second thick block.

If the solid blocks are still active, the player can roll an outline icon and a transformation icon to snag both rewards. The floating heart and outlines/solid blocks provide an opportunity for the player to scale the difficulty.

ROOM 8



Unlike prior rooms, Room 8's layout doesn't present the reward and then brief the player on how to get it. Instead, it makes it easier to overlook the arrangement altogether. The player can just cross the gap and proceed to Room 9 without even bringing the main arrangement into view.

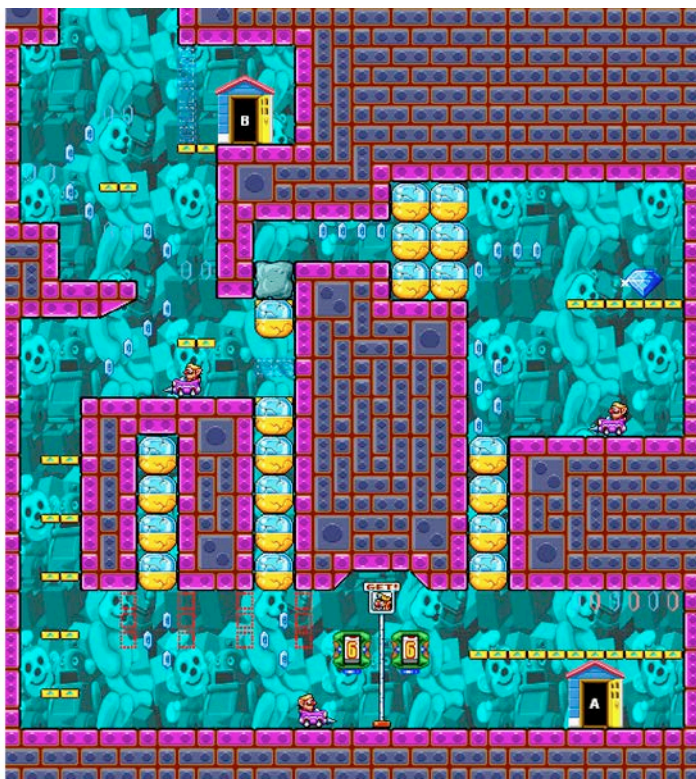
In Rooms 4 and 5, the player only needs to roll for one square. In Room 7, the player can scale the difficulty and roll for two squares. In Room 8, rolling for two squares, granted the block outlines aren't filled in, makes reaching the diamond easier. By activating the block outlines, Flat Wario doesn't need to swoop on into the unit-high passage. Because Flat Wario can't roll the dice, the player must roll for the outlines before the transformation. The setup offers a choice between the risk of not making the sway into the passage (by rolling for the outlines first) and the risk of not rolling the transformation (by rolling for the transformation first). The player's decision depends on which skills they feel more confident with, reflex (rolling the dice) or timing and knowledge (swaying).

The yellow platforms above the unit passage prevent Wario from CROUCH falling in.

Another dice switch arrangement around the corner offers crystals as a reward. (The dice switch isn't visible in the image). To reach the trio of red crystals, Wario needs to STOMP JUMP off the Harimen's yellow body. Both arrangements are quite obscure.

The blue background is used in the game's instruction manual.

ROOM 9



Bouncy Wario is the transformation. The arrangement presents three vertical channels sealed with regular blocks. By exploring the upper area first, the player can see that the left-most channel is a dead end. One choice is eliminated. The player is unable to see where the right-most channel leads. Although the big picture isn't yet apparent, as indicated by the frog block outlines and yellow platform behind the thick block, it seems that clearing the middle channel will help the player reach the right-hand area. The right-most channel takes them there, but the gap between the channel and yellow platform and Bouncy Wario's limited ability to move horizontally prevent Wario from claiming the diamond. As hinted at, the player needs to clear the middle channel, but even then they won't be able to reach the diamond until the frog blocks are active post-fold.

By partly concealing the outcomes of the player's potential actions, where the channels lead, the player doesn't have the information needed to make

an informed decision and must therefore gamble on the use of Bouncy Wario. Even if they check their surroundings beforehand and roll correctly, there's still a 50 percent chance of them misusing the transformation. The situation prompts the player to aim for two perfect rolls, in case the first leads to a dead end.

Rolling the dice has gone from guaranteed success to the point where even landing on the right square and correctly acting on the outcome doesn't ensure a reward. In the first board game arrangement, the player only needs to roll the dice. In this near-final board game arrangement, the player needs to observe their surroundings, land on the right square, choose one of several points of application, react accordingly, and return to claim the reward post-fold.

The lower area's bounding box is a screen and 1 unit tall so that when Wario jumps, the camera rises a unit, creating the perception that the camera's tracking when it's in fact concealing information from the player.

The Toy Car on the ground floor is positioned so that as Wario walks towards the dice switches, the enemy's coming right towards him, prompting the player to jump and accidentally roll the dice.

Around the left-hand side of the room, the bounding box lines up against the middle channel, preventing the camera from revealing the path to the diamond. If the bounding box were extended further to the right, the player would have enough information that they wouldn't need to choose between the centre and right channels.

ROOM 10



The slope's steepness tempts the player to ROLL down it before they do anything else. Given that the frog switch quickly comes into view, it's likely that the player won't respond in time to avoid falling on the switch.

THE FOLD

A pure fold. As the player can see when flicking the frog switch, the frog blocks and crystal outlines are activated. Rooms 8, 9, and 10 use frog blocks to prevent backtracking. Room 5's frog blocks facilitate access to the upper route. Room 3's stop Wario from claiming the crystals and floating hearts, putting the focus on the escape. The crystal outlines highlight the quickest route back to the vortex. Except for Room 11, the dice switches disappear post-fold as they're not needed.

ROOM 11



Room 11 is the peak of the game idea. The “Get a Goal” barrier is the lock. The final icon on the board is the key. The player must roll to reach the last square. The trick is that if the player rolls in excess of the number of squares to the end, Wario moves X number of squares backwards from the final square. This way, the player must roll the desired number at least once. The arrangement perfectly wraps up the game idea because:

- » It's the post-fold test.
- » It enforces a minimum participation requirement for the level.
- » It modifies the role of existing squares. The enemy, transformation, and lightning strike icons become the crux of the arrangement. It's not so much about landing on the final square as avoiding these danger squares.
- » The challenge is the same (roll the right number), but the threat has increased (because of the post-fold timer and danger squares), and so with more at stake, the player's pushed to concentrate.

- » Of scalable rewards and punishments. The more rolls made pre-fold, the less rolls to make post-fold. Active players are rewarded and inactive players are punished according to their participation.
- » Inactive players have the most distance to cover and thus more danger squares to avoid and more reason to roll well. Despite their lack of participation pre-fold, they're quickly brought up to speed.
- » The reflex tests of the dice roll, post-fold timer, and risk of wasting time and losing health builds the pressure to a boiling point.

The pool of water is for Flaming Wario.

THE TREK TO THE VORTEX

In Room 9, players who cleared the middle column can claim their diamond.

As the worst example of game design in *Wario Land 4*, in Room 8, the frog blocks and solid blocks form a path to the purple pipe. Firstly, the puzzle rooms should be accessible pre-fold and not restricted to the post-fold. This is not just because the arrangements promote experimentation, of which a timer only discourages, but because the pipes are accessible before the fold in every other level. Secondly, the platform directly under the pipe is made of solid blocks. In the same room pre-fold, the player's encouraged to deactivate the solid blocks (to reach the crystals near the flag pole). By following what's suggested by the game design, the player's denied access to the puzzle room. The communication is contradictory.

It gets worse for players who didn't activate the solid blocks, although not by means of bad game design. In Rooms 6, 4, and 3, the Toy Cars, with no platforms to stand on, fall, creating horizontal resistance as the player returns to the vortex.

TOPAZ PASSAGE: DOODLE WOODS

LOWDOWN

Passage: Topaz Passage

Level Number: 3 of 4

Visual Theme: Paper, fabric, and sketches

Game Idea: Arts and crafts

Key Level Elements: Posts, concealed areas, push pencils

Folding: Reroute

Fold Measures: Frog blocks, height, zig-zag doors

Enemies: Hoggus, Dendens, Butabis, Deburinas, Toy Cars, Totsumen, Ringosukis

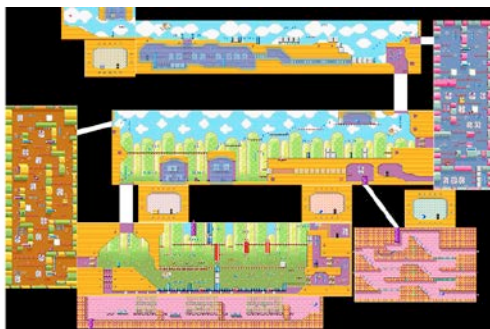
Number of Enemies: 10 (Not including Dendens, Butabis, and Deburina posters)

Heart Medallion: No

Number of Floating Hearts: 19

INTRODUCTION

Doodle Woods has a primary school arts and crafts vibe with terrain made of foldy paper, drawings pinned to walls, pencil tips acting as spikes, and cloth patterns with mountain sketches filling in the backdrop. Hoggus, a Lakitu-esque character who spawns enemies by drawing them on his sketch pad, is central to the handiwork theme. The name Doodle Woods likely refers to Hoggus's doodlings.



The level is made up of rectangular rooms. Pre-fold, Wario weaves through the three main horizontal rooms to the bottom of the stack. Hoggus, by spawning enemies, adds interaction to the rooms. The arrangements are kept simple to complement Hoggus and not clutter gameplay or overwhelm the player. The level elements act as speed bumps which hold Wario stationary on the horizontal axis long enough to leave him vulnerable to the pig artist's enemy drops. With few obstacles over a significant stretch of level, these outside rooms are ideal for drawing out the interplay between Wario, Hoggus, the enemies he spawns, and the level elements. The engagement comes from simultaneously dealing with the enemies and navigating the landscape.

Post-fold, the vertical, interior rooms lead Wario back up the stack to the vortex. The outdoor arrangements are obliged to work around Hoggus's enemy spawning. Indoors though, the game idea shifts to Deburinas and push pencils. Working against gravity and the post-fold timer replace Hoggus as the core engagement.

On hard, Toy Cars populate the outside areas.

GAME IDEA

Arts and crafts is the game idea. It consists of three main parts: paper (concealment), pencils (push pencils), and drawings (Hoggus).

Although, like the other gimmicks in *Topaz Passage*, interacting with Hoggus is entirely optional, unlike the other gimmicks, Hoggus is difficult to avoid. The pig artist shifts from one side of the screen to the other in an effort to always be in front of Wario, where his creations fall in Wario's path. These enemies, Butabis and Dendens, disrupt progress and force engagement. Butabis swing sharply from left to right, covering a large distance and leaving minimal time to dodge. Dendens are tricky to interact with given their subversive interplay system and protective shield of spikes.

Concealment adds layers to the level. Interactive concealment, like the blue screens or blocking Hoggus's drawings, presents a front layer. Visual concealment, like the holes in the orange texture, presents a back layer. These two types of concealment extend this game idea which has gradually developed over several levels.

Push pencils are platforms which poke out from walls. Attacking them from one end pushes them through to the other side of the wall where they can be used as a step. The interior rooms draw out this added step of interaction so as to create various mini-arrangements.

GAME IDEA TIMELINE

Hoggus: Introduction, context set for Hoggus-blocking – More opportunities to Hoggus-block, can use a Butabi to reach reward – Post-fold timer meets Hoggus

Visual Concealment: Constant

Interactive Concealment: Blue foldy covers are introduced–Foldy covers as curiosity markers–Block in a wall, blocks concealing a door, foldy covers as mandatory–Disrupting Hoggus's attacks via layered level elements

Push Pencils: Introduction–Combined with Fat Wario and designed around sequence

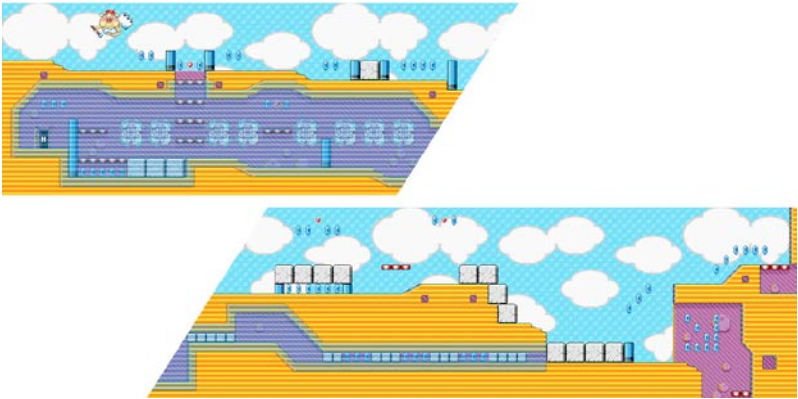
ROOM-BY-ROOM ANALYSIS

ROOM 1



Room 1 re-introduces concealment. As Wario jumps onto or over the post, the suspicious, foldy paper occupies more screen real estate. Jumping from the post to the platform to investigate, Wario briefly enters from behind the blue cover which fades away, revealing a jewel piece chest inside. The player is drawn upwards. The placement of the post and platform initiate the player's curiosity in and understanding of concealment.

ROOM 2

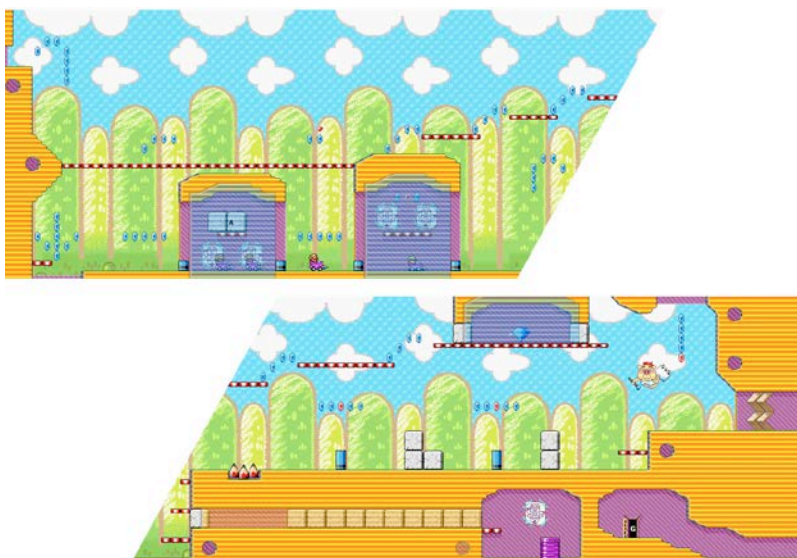


Hoggus drops in as Wario enters. The crystals are under blocks, between posts, and in the sky to both slow Wario down and get him covering a wider area. This ensures that he spends less time walking away from the Butabis and Dendens and more time in their range. The blocks, which beg to be broken, also slow Wario down.

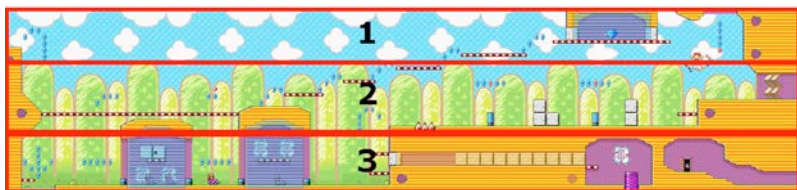
The gap between the posts and blocks on the right both appear to lead Wario into the underground area, but don't. They create a mystery which is solved post-fold, unless Wario bounces off a Butabi and ROLLS his way in from the top-right corner.

At the right-hand exit, Hoggus floats between the orange terrain and purple backdrop. When behind the former, the terrain blocks his drawings/enemy spawning. By virtue of having this cavernous opening early in the level, it sets the context for future Hoggus blocking.

ROOM 3



Room 3 is broken into three screen-tall bounding boxes that extend across the length of the room. As Wario falls from Room 2, he's in the upper bounding box. Before he lands, he's in the middle bounding box. After the second drop, past the pencil spikes, he's in the lower bounding box. Please see the image below for a visual example.

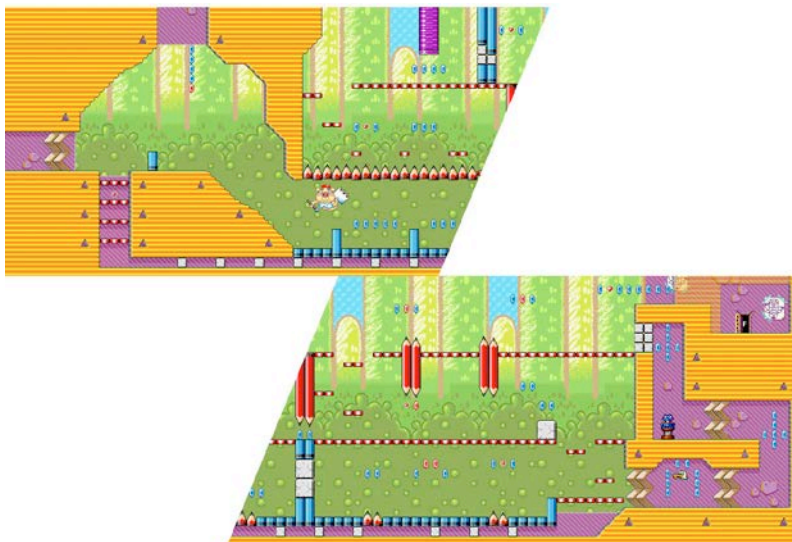


The crystals leading down into the lower bounding box encourage the player to jump forward, which makes it easy to overlook the block in the wall leading to the puzzle room. Another underground area is visible from the purple pipe. It appears as though it's accessible from the other side of the zig-zag door above. The foreshadowing encourages information retention

Hoggus flies off when Wario's in the lower bounding box as the two roofed sections shield his sketch pad. The game idea shifts to concealment, and the arrangements become a tad more sophisticated in Hoggus's absence. Toy Cars are stand-ins for Butabis and Dendens. Since the blue, foldy paper fills

Wario's path, understanding concealment is now mandatory. A door covered up by blocks in the left-hand housing adds another layer to the idea. The Deburina posters establish themselves as non-interactive game elements. This will later be subverted.

ROOM 4



Similar to Room 3. Here are the points of interest, arranged in the order Wario approaches them:

- » The red platforms and floating heart underground are curiosity markers.
- » Pencil spikes elicit jumps, crystals are placed at the apex, and the blocks between the posts act as a breakable gateway. These devices slow Wario down and bring him into the air where it's harder to dodge.
- » The red crystal, floating heart, and upside-down pencil spikes arrangement tests the JUMP'S length of press (dexterity, timing, risk/reward).
- » The pencil spikes/purple pipe arrangement is another example of risk/reward.

Although the posts and pencil spikes obscure Hoggus from view, they don't cover enough screen space to negate his presence. Instead, they make Hoggus-blocking easier by being present throughout the room and not just to the far side.

Before the frog switch is a row of crystals with a floating heart leading to an upper ledge. The player needs to wait for Hoggus to spawn a Butabi and then leverage its height to STOMP JUMP up to the platform. The diamond rewards observation, creative use of game elements, and the ability to track the Butabi's movement patterns (knowledge and adaption).

As with the prior level, it's possible to avoid the frog switch, but chances are most players will unwittingly land on it.

THE FOLD



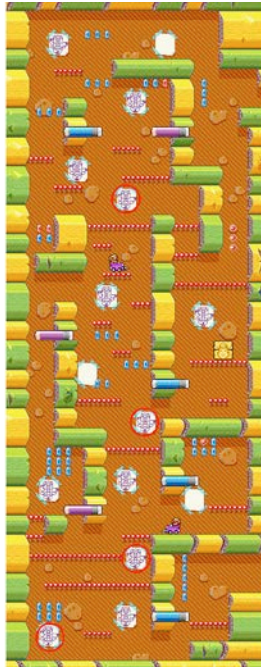
A reroute through two vertically-orientated rooms making up the height. The zig-zag doors grant entry to the new rooms, while frog blocks and height prevent backtracking. Despite the absence of outlines pre-fold, frog blocks appear in all the pre-fold rooms bar Room 1, denying access to Room 4's main area, Room 3's lower bounding box, and Room 2's right-hand entrance.

Post-fold, concealment takes a backseat to pencil pushing and the active/inactive states of the Deburina posters. Hoggus is absent in the vertical interiors, but returns outside where the player must contend with the pig artist, post-fold timer, and navigating Wario, tightening the game idea.

ROOM 4

The path following the frog switch is punctuated by three zig-zag doors so that the player can see that they're now active. With the final door open, Wario can access the slope and ROLL through the underground channel, exiting through the set of red platforms. The curiosity comes full circle.

ROOM 5



Deburinas and push pencils are introduced. Deburinas spawn from some of the posters pinned up throughout the room (circled in the image). Most of them on hard. Similar to Utsuboankos, the ballerinas only come out when Wario's in front of their specific spawn points, the posters. These visible, potentially-active—potentially-not—threats inhibit the player's platforming. For maximum effect, they're put at junctions.

The verticality exacerbates the soft punishment. The red platforms form floors which divide the room into thirds. This division minimises the punishment of falling and prevents the player from having to repeat the entire room because of a single mistake. The narrowness of the platform with the Toy Car increases the frequency of the enemy changing directions and shortens the time at which it's facing away from Wario. These factors make it harder to safely land the jump. The crystals are placed out of the way (risk/reward).

At the entrance, the push pencil is a lock. Wario can't get anywhere until he ATTACKS it, pushing it out to the other side. Prior to ATTACKING, he can use the pencil as a platform to reach the crystals. The crystals have the player model the dual functionality of the push pencils. This establishes a play

behaviour realised in the later arrangements (context setting). Through the restricted practice, the player learns how to operate and make the most out of the push pencils. When Wario reaches the other side, the pencil is already in position for the next leg of the arrangement. A Deburina spawns from the bottom-left poster—away from the main area, but in view—so that the player can see how they may pose a threat later (context setting).

A little further up, two push pencils are put together. On the left, the through platforms trap Wario so that he can only escape by pushing the pencil out (a continuation of the restricted practice). Deburinas spawn from the posters on the way in and out of this section. Being in Wario's path, the player can't avoid them and must, at least, recognise their presence.

In the second section, using the push pencil as a platform on both sides is mandatory thanks to the jewel piece chest.

The third section is similar to the second, but with more jumps. The pencil on the left catches Wario's fall after he nabs the crystals above. The player needs to remember its position and consciously move Wario to the right as he falls (short-term memory skills, risk/reward). As Wario must push a pencil away from him to reach the entranceway, the final leg subverts the knowledge built up over the prior three arrangements.

ROOM 3

There are three transitions between the bounding boxes: Wario enters the room in the upper, drops to the middle, ascends the platforms back to the upper, and falls next to the entranceway, into the middle. With a complete picture of Room 3, we can now see how the room is designed around the three bounding boxes: the crystals next to the upper entranceway fit within the upper box, the two sets of ground-based arrangements fit within their boxes, and the red platforms are arranged so that the transition doesn't distract the player as they're focusing on the ROLL JUMPS. All of *Wario Land 4*'s levels are designed around the camera. This is just one particularly interesting example.

After following the crystals, Wario lands next to the slope. Taking the bait and ROLLING starts off a reflex testing exercise as Wario ROLL JUMPS up the red platforms. With his horizontal movement automated, the player only needs to focus on pressing the A button when Wario meets with the crystals. The rewards act as a reaction prompt.

ROOM 6



Room 6 develops the push pencil idea by incorporating Fat Wario and sequencing. The thick block is the lock and the Ringosuki, visible under the through floor, is the key. Solving the arrangement involves pushing the pencil to the left, SMASH ATTACKING the Ringosuki up a few steps, transforming, and then using the pencil platform to reach the thick block. Given that Wario can transform without a pencil platform to jump on, the actions need to be completed in a specific order. This is akin to Toy Block Tower's sequence puzzles. Players that remember the underground passage from Room 3 know where the path underneath the thick block leads.

Re-entering the room resets the position of the pencil. With the thick block gone, the player can't push the pencil back to the left. This is significant as doing so would cut off access to the subsequent area, forcing the player to backtrack and push the pencil out to the right. The arrangement prevents the player from wasting their own time.

On the way back up, the red platforms form a ladder, while the Ringosuki is an obstruction. The role of game elements depends on Wario's relative position.

Wario enters the next section from the right so that he must cross the posters, spawning a Deburina which can then be used to STOMP JUMP up

to the red crystals. The two blue crystals draw the player's attention to the left-hand side. The Deburina must be in the neutral state (not paralysed) for Wario to STOMP JUMP high enough to reach the upper ledge. Because of the low-hanging chunk of pink terrain, moving the Deburina over is a little tricky. The player can wait for the enemy to spin its way to the left or paralyse it, THROW it over, and JUMP on it as soon as it returns to the standing state. This simple arrangement takes a surprising amount of effort.

On the right, Wario enters from the left so that he must confront the Totsumen.

In the topmost area, the two push pencils are arranged vertically. This forces the player to use one as a platform to reach the other and then push from the top pencil down. As with the Ringosuki arrangement, the puzzle hinges on sequence.

ROOM 2

ROLLING down the slope leads Wario to the previously-inaccessible area underground. A CD and crystals reward the player for exerting their short-term memory and clearing the blocks at the entrance pre-fold.

TOPAZ PASSAGE: DOMINO ROW

LOWDOWN

Passage: Topaz Passage

Level Number: 4 of 4

Visual Theme: Dominoes

Game Idea: Race against falling dominos

Key Level Elements: Starters, ends, dominoes

Folding: Skirting along the fold

Fold Measures: Frog blocks, through platforms

Enemies: Harimen, Toy Cars, Menhammer, Goggles-Blades, Shieragutchi, Spiky Balls

Number of Enemies: 20

Heart Medallion: No

Number of Floating Hearts: 12

INTRODUCTION

Domino Row uses dominoes (a visual representation of time) along with starting and ending markers as the framework for a variety of jumping, ROLLING, CLIMBING, and swimming drills. Post-fold, a series of shortcuts provide an alternate route through the level. The visual theme is played up with terrain made of domino faces. Subtle, eh?

GAME IDEA

Domino Row continues Topaz Passage's tradition of optional arrangements. Each level has its own method of courting the player into participation, and each method is more convincing than the last:

Toy Block Tower: Diamond rewards

The Big Board: Diamond rewards and persuasive level design

Doodle Woods: Intrusive enemy spawning

Domino Row: The running race and rewards

Domino Row is the most persuasive of all the levels.

Each room is a race to the finish line between Wario and a set of dominoes, with crystals, jewel piece chests, and post-fold shortcuts up for grabs. The arrangements are more in line with Big Board than the unsophisticated, vanilla templates of Doodle Woods and Toy Block Tower.

Because the level elements have functional, visual, and aural likeness to objects in a running race, the player quickly sees the arrangement as a competition and acts according. The form is familiar, drawing the player to engage with the function. When Wario crosses the starter, the gate flings back, the shutters close on the doors, and the dominos darken and start falling. The gate kicks the race into action: it's the official who fires the starting gun. The shutters bang when they hit the floor: the gun has been fired. The dominoes fall forward, breaking out in front of Wario. Their position next to him make them a competitor. As the dominos meet, they emit a tick sound which successively mimics the ticking of the stopwatch. Since Wario or the final domino must land on the ender switch to confirm their first place position, the ender provides tangible proof of the winner, like a photo finish. The "W" or "D" flag, the national banners, are then raised. Crystals, hearts, jewel piece chests, and shortcuts are the medal.

Dominoes are used as they not only fit in well with Topaz Passage's toy theme, but are a concrete representation of time embedded in the context of gameplay (a competitor in the race). The player can easily gauge how well they're doing by comparing Wario's position to the falling dominoes'. Since their eyes are already focused on Wario, it takes minimal effort for them to get their bearings. The player's given continuous, constructive, and easy-to-read feedback on their performance while they race. This knowledge empowers them and thereby increases engagement. If time were represented in an abstract form, such as a numeric timer, there would be no concrete connection between Wario's progress and the timer. Since the player has no prior knowledge of the race arrangements, the amount of time they have to reach the finish line is meaningless¹.

With time visually integrated into gameplay, the game designer can manipulate its presentation to modify how the player interacts with the information. From this, new and interesting wrinkles of gameplay can develop. For example, the dominoes can veer in and out of view as in Room 5. With their visual crutch temporarily removed, the player's prompted to picture the timer continuing in their mind. This emphasises knowledge and timing skills on top of the execution skills tested in the race.

1 What about the post-fold timer then? Well, the player is already familiar with the pre-fold before they attempt the post-fold. As for reroutes, the new rooms are akin to temporarily removing the timer from view.

Since the reward is next to the ender and the player can only see the area around Wario, they only know what the reward is once they've moved Wario to the ender. Therefore, when the race starts, the player has no idea what's at stake. Without full knowledge of the situation, they're encouraged to play it safe and participate in all the arrangements.

The arrangements' likeness to a running race, empowering representation of time, and the player not being able to see the rewards until they've finished the race persuade them to participate in the optional arrangements. Aside from these core examples, there are another two factors which elicit the player's agency: the impulse to not lose and the sense that something's going on around them and they're not a part of it. The former is different from the likeness to a running race, which is a context that elicits a particular behaviour. The latter is a result of the visual, oral, and functional presence of the race and the ubiquity of its moving parts.

Spiky Balls are a minor game idea developed independently of the race. Later, they're combined with the race.

GAME IDEA TIMELINE

Race: Introduction of enders – Introduction of starters, dominos, rewards, and fail state – Introduction of time-active blocks and variable domino paths – Height and Menhammers mixed in – ROLLING mixed in, manipulation of the timer – Swimming and CLIMBING transform the sprint into a triathlon – Spikes and branching routes mixed in

Spikes: Horizontal arrangement free of the time limit – Vertical platforming arrangement free of the time limit – Incorporated into a race

ROOM-BY-ROOM ANALYSIS

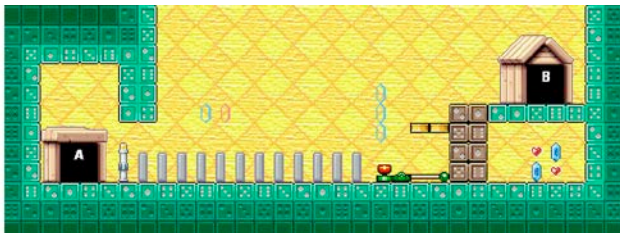
ROOM 1



The first room reveals the Keyzer's location and has the player demonstrate how the ender clears the domino blocks. The crystals in the shape of an arrow appear to be pointing out the obvious, but are needed to distinguish

that Wario can't just WALK over the switch; he must land on it. The crystals and raised ledge elicit a full JUMP. The restricted practice removes any uncertainty which would only boil over into frustration if the player were to later reach the ender before the dominoes, but not jump on the switch.

ROOM 2



All race-related level elements not in Room 1 (the starter gate, door shutters, crystal outlines, and line of dulled dominoes) are in screen view when Wario enters Room 2. The ceiling extends downwards so as to prevent the player from jumping the starter gate. This is the case for all subsequent domino arrangements. Passing through the starter gate causes the arrangement to spring to life. With everything in screen view, the player can see first hand how the gate modifies the other level elements. The shutters prevent Wario from exiting the room and manually resetting the arrangement mid-race. They limit the player to a single try as repeating a race with pre-existing knowledge of its construction would dilute the challenge. For the same reason, the races don't reset when Wario re-enters a room. As always, the crystals create risk/reward.



The starter is to Wario's right, in the foreground, while the dominoes are to his left, in the background. When Wario (a middle ground element) walks through the starter gate (a foregrounded element), he pushes the bar, which spins around and hits the dominoes (a backgrounded element), starting the chain. This is the only example in *Wario Land 4* of interplay between three layers.

Room 2's restricted practice covers the second half of the race arrangements: the interplay between Wario, the dominoes, the ender, and the domino blocks. If Wario reaches the ender before the dominoes, the

ender raises a “W” flag and the domino blocks blow up, allowing the player to claim the reward. If he doesn’t, a “D” flag is raised and the blocks remain the same. Regardless of the result, the player wins as they learn of the relationship between the disparate game elements.

If the player flicks the ender switch before they collect the crystals, the rewards will revert back to outlines.

The room is a screen tall to prevent vertical scrolling. With the camera locked vertically, Wario can’t jump and have the camera track and obscure the player’s view of the ender. The room size supports the arrangement by making it easier to see the dominoes landing, or not landing, on the ender switch. This helps the player understand how the level elements are connected.

The yellow background makes the grey dominoes stand out. The crystals float above the switch to once again remind the player of the required jump. The right-hand door is put above the rewards so that they’re on-screen longer, as Wario takes to the steps. The placement attempts to make the player care about the rewards.

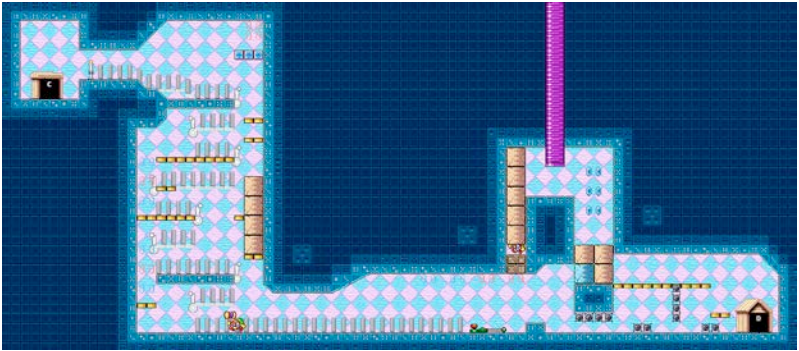
ROOM 3



Room 3 reviews the first two rooms and adds Toy Cars and time-active platforms. The slope can be used to beeline to the end wall. Backtracking to the ender balances out the ROLL’S fast speed. The white knockers, which link separated sets of dominoes, skew the presentation of time so that it takes more effort to read the dominos.

Time-active platforms make their first and only appearance in this room. The left-most platform is just high enough that Wario can’t reach it with a full JUMP. The crystals and floating heart encourage the player to jump over from the neighbouring time-active platform.

ROOM 4

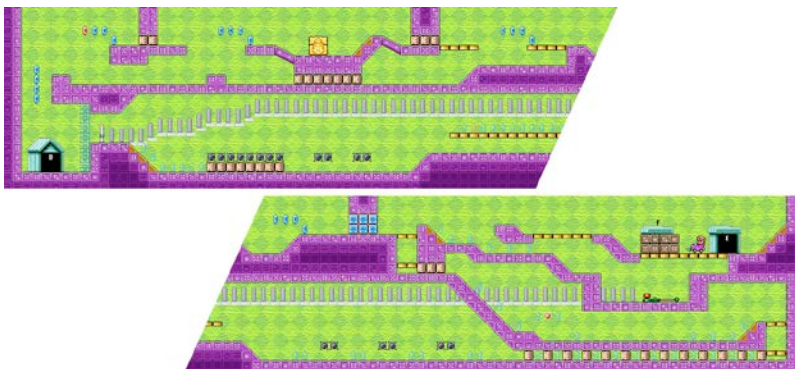


Soft punishment, through height and transformations, develops the game idea. Slopes once again kick-start the race. They appear in most of the subsequent arrangements.

The crystals lure the player to the left so that Wario confronts the Menhammer. The enemy thwarts Wario's lead by obstructing his path and transforming him into a form where horizontal movement is limited. The solid platform above offers a convenient means of recovery. It wouldn't be fair to lose the race over a single mistake. Pre-fold, the Menhammer's a nuisance. Post-fold, it fast-tracks Wario to the top. The role of enemies and level elements is dependent on the state of the level.

Unlike most risk/reward arrangements, which place the crystals to the side so that Wario must deviate from the main path, the crystals near the ender leverage the time it takes Wario to reach the apex of a full JUMP. The four pairs of crystals, separated enough that Wario can only grab two at a time, allow the player to scale the risk/reward.

ROOM 5



Room 5 brings ROLLING to the races and temporarily removes the dominos from view. The slope sends Wario ROLLING out in front of dominoes so that when he reaches the right-hand wall, they're off-screen and the player can't catch their time bearings. In ball form, Wario travels at about twice the speed of the dominoes. On the right-hand side, he must zig-zag up to the ender while the dominoes continue to fall in a straight line, making up the distance. These two factors, Wario's changing speeds and the discrepancy between his path and the dominoes', make it difficult to judge Wario's relative position. By concealing and obscuring the timer, the player's left in a state of uncertainty which drives them to quickly reach the end. Such prompts are needed as Room 5's timer is tight to the point that success hinges on how well the player executes and recovers from the ROLLS.

Combing over the arrangement, the slope's distinct brown colour implores the player to ROLL down it. The crystals and unit blocks along the floor provide additional persuasion and keep Wario on the ground. The crystals on the platform reward the player relative to the speed of their reaction to the game elements entering screen view. The dominoes sit above Wario so the player can see them as Wario initially cruises past. The assumed advantage is then subverted when the player sees the dominoes fall on through while they scurry back and forth up the right-hand staircase.

On the right, as Wario crosses each floor, the player can see and is thus briefed on the floor above. The through platforms double as locks, kept low so that they undercut Wario's bounces off the walls and prevent backtracking. The final slope leads Wario to ROLL onto the switch.

The outline of the room is marked with straight, diagonal lines so that no matter where the player might stuff up a ROLL, there's always another slope nearby.

ROOM 6



The two routes represent Room 5's winning and losing scenarios. The room is small enough that the player can see both as Wario ascends. On the right, each step builds off the last: Wario **CROUCH WALKS** under a Spiky Ball, **CROUCH WALKS** under a row of Spiky Balls, and **CROUCH JUMPS** up towards several Spiky Balls. The risk of touching the hazards increases in each instance. Breaking the blocks pre-fold saves time post-fold. The player is rewarded for showing initiative.

At the top is a lock within a lock. The Toy Car Wario needs to **STOMP JUMP** on to reach the diamond is locked behind the line of blocks which can only be broken by the second Toy Car on the left. The Spiky Balls prevent Wario from **ATTACKING** the blocks. The row of crystals and unit-high gap suggest that a **CHARGE THROW** is needed.

ROOM 7



Room 7 adds water, ladders, and extended verticality. Unlike Room 5, which is restricted thanks to its short time limit, few divergences, and automated mode of traversal, Room 7 is much freer with a generous time limit, lots of off-track risk/reward, and two less directed means of traversal.

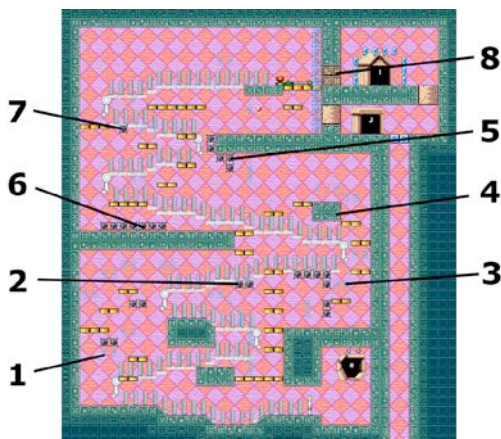
The rows keep Wario and the dominoes neck and neck before Wario slowly edges out into pole position, forming a sizeable lead by the third row. The crystals can't be avoided. This initial section gives the player a false sense of confidence. The implication being that they can claim all the rewards and still come out on top.

And then we hit the water. The crystals lead the player past the suspicious-looking inlet. The unit-wide wall allows them to peek inside. The red crystals elicit entry. Swimming up to the crystals brings the jewel piece chest into view. Although JUMPING out of the water to open the chest is a significant time sacrifice, on seeing the yellow box, most players will likely take the bait, based on their impulses developed by the game's conditioning. Furthermore, it's not clear at this point whether Wario'll be able to access the chest post-race, so, given this context, claiming the jewel piece mid-race isn't such a bad move. If the player takes the bait and then loses the race, they'll learn a vital lesson on the consequences of risk/reward.

The underwater enemies are off to the side posing little threat. The crystals on the right are quite the trade-off as the player must not only avoid the Shieragutchi, but veer away from the goal.

The stretch after the water tasks the player with CLIMBING onto ladders in mid-air. This requires a combination of dexterity and timing skills as the player must shift their left thumb from either the left or right arm of the d-pad to the top when Wario overlaps with a ladder. Aside from my theoretical game idea (see: [Game Ideas](#)), there are few, if any, similar ladder hopping arrangements. The shortcut reward for winning the race can only be realised post-fold.

ROOM 8



The final speed run arrangement adds branching routes and brings together ROLLING, risk/reward, verticality, and Spiky Balls. The crystals are put near Spiky Balls to elevate risk as the hazards can send Wario recoiling down a floor, undoing the player's progress.

The following eight points correspond to the eight parts of the arrangement highlighted in the reference.

1. These crystals consume more time than they appear to as they're just enough to the left that Wario can't land back on the platform.
2. These Spiky Balls prevent Wario from jumping to the other side.
3. These crystals lure the player underneath the Spiky Balls. The neighbouring unit gap makes the pair appear within easy reach (like #1), however, it's high enough off the ground that Wario can't CROUCH JUMP his way through.
4. This platform is solid to stop Wario from jumping over from the left.

5. These Spiky Balls prevent Wario from jumping over to the left and nabbing the crystals in the one shot. That is, they don't allow the player to circumvent the risk in claiming the reward.
6. These Spiky Balls force Wario to make a longer jump.
7. This Spiky Ball undercuts Wario's fall, which makes it difficult to jump out, grab the crystals, and safely land back on the same platform. Instead, the player ought to jump to the left-hand platform and back again.
8. The domino blocks are next to the ender to reward winners with the convenience of walking directly ahead and punish losers with the inconvenience of having to descend a floor.

As many of these points demonstrate, the game elements are arranged to maximise risk and yet make the rewards appear within easy reach, all the while preventing the player from taking the rewards without facing the risk.

ROOM 9



Success in Room 8 leads Wario to the silver chest. Falling from the ladder drops him onto the thick block covering the path to the purple pipe. More dexterity is needed to clear the thick block as Wario must CLIMB the ladder, JUMP off, and SMASH ATTACK all within a short window of time. Coming from the pool of water, it's easy to overlook the puzzle room as the frog switch is placed before the thick block.

THE FOLD

Like Pinball Zone, Domino Row is a skirting along the fold level, however, some rooms are pure folds. Many of the rooms are refurbished with either alternate routes or shortcuts dependent on the pre-fold race results. Frog blocks scaffold the shortcuts and prevent backtracking. There are no domino races post-fold, although the post-fold sprint could be interpreted as the highest form of the game idea, a level-wide race.

TREK BACK TO THE VORTEX

Approaching the arrangements from the other end, the new routes, and subtle differences post-fold shift the focus of the rooms. Rooms that are self-explanatory aren't included in the commentary.

Room 7 – The player can finally claim their reward, a shortcut and crystals. For players who lost this race, the platforms are now hinderances which interrupt Wario's descent, while the horizontal channels only make the timer more apparent (negative space).

Room 6 – If the player didn't clear the blocks before, they need to now. Initiative is rewarded.

Room 5 – If Wario lost the race, the domino blocks that weren't cleared prevent him from ROLLING earlier. Unbeknown to the player pre-fold, the reward is twofold. Similar to the lower arrangement, the upper uses ROLL to test reflex.

Room 4 – Wario can take the upper shortcut by DASH ATTACKING through the blue thick block. The Menhammer is an aid. The blocks above are in screen view to tell the player where to spring from. There's no need to memorise.

Room 1 – With the frog blocks removed, Wario can grab the Keyzer and enter Room 10.

ROOM 10



Now that Wario has the Keyzer, the player will want to return to Room 1 and leave. As the crystals next to the pipe remind them though, there's still one last jewel piece left. With the jewel piece chest being on the other side of the wall, the player's obligated to explore below.

To enter each of the three sections, Wario needs to SMASH ATTACK the initial block, which in turn flips the Harimen so that their spikes cover part of the subsequent entry point. The setup has the player be a nuisance to themselves, a useful technique for post-fold tension. They can either wait for the Harimen to flip back over, which saps precious time, or try to navigate around the enemy, which could lead Wario to touch the spikes, lose health, recoil, and waste even more time. An unfamiliar take on risk/reward.

Since Wario approaches the Harimen from underneath, the arrangement makes it easy for him to JUMP up into its yellow belly and paralyse it, teaching the player another way to defeat the enemy.

The left-most arrangement introduces another interplay string, CHARGE THROWING a rock at a Harimen. The rock, being in Wario's path and difficult to avoid due to the low ceiling, seems important. The player will almost invariably PICK it UP. Since Wario can't hold the rock while CLIMBING the ladder, the player can either drop the projectile or throw it up past the through platform. When throwing the rock, there's a chance it'll hit the Harimen and destroy it. Intentional or not, the player learns of the respective application of the rock and property of the Harimen. Once up the ladder, the player can see the path to the jewel piece chest which appears treacherous and complicated. When Wario holds the rock, it sits horizontally in line with the Harimen. The visual alignment proposes a way to clear the complication from a safe distance, a horizontal CHARGE THROW. The second part of the arrangement works to reinforce the first.

Throughout the room, the composition of game elements creates a common sense which leads the player to teach themselves more about projectiles and Harimen. The pair of crystals guide the player to the shortcut.

SAPPHIRE PASSAGE: CRESCENT MOON VILLAGE

LOWDOWN

Passage: Sapphire Passage

Level Number: 1 of 4

Visual Theme: Abandoned village

Game Idea: Being pursued by a ghost

Key Level Elements: Blocks, posts, slopes

Folding: Pure fold

Fold Measures: Frog blocks

Enemies: Miniculas, Harimen, Skeleton Birds, Men'ono, Goggley-Blades, Yurei

Number of Enemies: 27

Heart Medallion: No

Number of Floating Hearts: 9

INTRODUCTION

Crescent Moon Village is a primer for the Halloween theme developed throughout the rest of Sapphire Passage. Wario explores the village through a series of dark streets and abandoned buildings. The level follows an indoor-outdoor structure where the player's introduced to Skeleton Birds and Miniculas inside, while Yurei, the pirate ghost, keeps watch outside. The frequent changing of focus gives the level a scheduled variation and rhythm. Post-fold, this structure translates to alternating moments of fleeing Yurei and reprieve, a tide of increasing and decreasing tension. Once Wario opens the door to the next level in the passage, Yurei, with no Keyzer to chase, becomes a harmless distraction on repeated playthroughs. The derelict village's night time setting contextually justifies the use of lamps and lights as level elements.

GAME IDEA

There are two game ideas in Crescent Moon Village: Yurei and the transformations. Yurei is similar to Hoggus from Doodle Woods. He floats at the top of the screen, swooping down to grab stray coins or the Keyzer. His translucent form prevents Wario from touching him. The outdoor rooms are stretched horizontally so that his pursuit extends out to a chase.

Pre-fold, before Wario has the Keyzer, Yurei only grabs coins. With a generous number of blocks and Harimen outside, there are plenty of spoils for Yurei to chase. The pirate ghost also steals Wario's lost spoils, denying the player the opportunity to save face. The pitifulness of stealing loose change and the enemy's mischievous laugh afterwards defines Yurei as a minor pest, setting the scene for the post-fold escalation where he turns his attention to the Keyzer and the stakes are raised. Because the Keyzer always floats next to Wario, unlike coins which only stay on-screen for a limited time, post-fold, Yurei is always active, and thus the tension outside remains constant.

Luring Yurei out with coins and avoiding his swoops for the Keyzer while navigating past obstacles make the outdoor areas more engaging.

The interior rooms use smartly-designed tutorials to introduce and test proficiency with Zombie and Vampire Bat Wario.

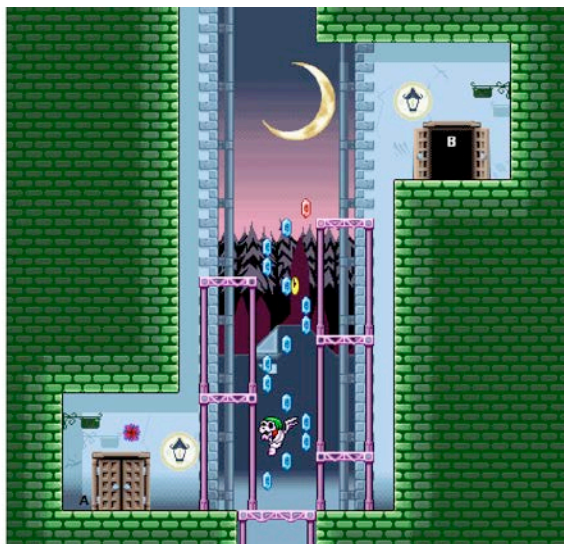
GAME IDEA TIMELINE

Yurei: Steals coins–Steals the Keyzer

Transformations: Skeleton Birds and Zombie Wario introduced, a focus on falling past through floors and the two means of exiting the transformation – Same content, but presented in a different form – Vampire Bat Wario introduced, a focus on light sources and navigation – More Zombie Wario – Navigating Vampire Bat Wario

ROOM-BY-ROOM ANALYSIS

ROOM 1

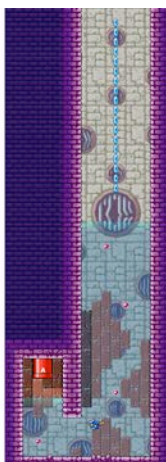


The Skeleton Bird not only covers a sizeable area, but is difficult to avoid (due to its downward diagonal projectiles and unusual, up-and-down wave movement). It's likely that the player will, whether through accident or curiosity, have Wario touch their goo projectiles and transform into Zombie Wario. The platforms are high enough that Zombie Wario can't reach them, not that he could stand on them anyway. With Wario stuck in this limited form, unable to progress, the player must learn their way out of the state they got themselves into. There are two possible solutions: the left-hand lamp or the through platform below. The lamp fits the haunted village context a little too well, so despite the obvious association, the player might not see the light source as anything beyond window dressing. Falling into the through floor sends Wario to Room 1.5 where touching the water cures his undead ailment. The platforms and crystals trigger the jump. If the player gets Zombie Wario to touch the Skeleton Bird, they'll learn of the enemy's extra chain of interplay exclusive to the transformation. Restricted practice enforces education.

There are three layers of parallax scrolling visible in the background as Wario ascends the platforms: the trees, the moon, and the clock tower.

The brick terrain in each of the four outdoor rooms is coloured differently, bar the underground rooms which are both a deep purple. The colour helps the player distinguish between the areas, despite their similar arrangements.

ROOM 1.5



No matter if Zombie Wario falls through on the left or right side of the through platform, the divide between the rooms re-aligns him to the centre where he falls through the line of crystals. The bubbles in the water provide vertical resistance. Four of the level's nine floating hearts are in this room.

ROOM 2



The Men'ono is placed on top of a block to introduce the enemy and facilitate different types of interactions. Standing on the adjacent block, Wario's within the Men'ono's range, however, despite running furiously towards Wario, the enemy can't cross the unit gap to attack him. The player learns of the Men'ono's core interaction and its limitations without putting Wario in harm's way. The block and the enemy's placement on it offers the player a greater

number of potential interactions than if the Men'ono were just on the floor.

The lights and Skeleton Bird arrangement reinforce Room 1's tutorial. The following points make it easy for Wario to succumb to the Skeleton Bird's goo projectiles:

- » The Skeleton Bird is given the height advantage.
- » The crystals lure the player over the blocks.
- » The blocks minimise the distance between Wario and the Skeleton Bird.
- » Breaking the blocks causes Wario to bounce back, leaving him vulnerable.
- » The blocks are close enough to the left wall to prevent Wario from DASH ATTACKING through.

If Wario transforms while above a block, as by the crystals' persuasion, the player will see that Zombie Wario can't pass through blocks. Because the blocks are on the left and the Skeleton Bird is on the right, Wario's likely to fall through on the right, giving him another chance to interact with the Men'ono if the player had avoided it originally.

Who's the old guy with the shoulder pads in the photo? I'm guessing either Dr. Arewo Stein or Yurei in human form.

ROOM 3



As Wario descends the stairs, Yurei swoops in and asserts himself as an invisible threat. Blocks and Harimen are paired together for two reasons. Firstly, by SMASH ATTACKING the blocks, the player indirectly flips over the Harimen and learns how to expose their weak point. Secondly, Harimen and blocks drop spoils which Yurei can swoop in and collect. The Harimen in particular drop large silver coins, making Yurei's potential theft all the more noticeable.

The outlines and switch block seem needless, but they create a point of comparison which makes Yurei's role more apparent. On the player's first run, they'll probably break a few blocks and defeat one of the Harimen, luring Yurei out into the open. The red crystals elicit a jump, which brings the diamond and outlines into clearer view. After flicking the switch block, the

knowledge of the diamond and outlines convinces the player to backtrack and claim the reward. They'll probably break less blocks the second time round as there's fewer of them and what's left forms a more direct path to the diamond. In one instance, the player's likely to create more spoils and elicit more swoops from Yurei. In the other, there's fewer spoils and less Yurei. This contrast helps the player pick up on Yurei's money-snatching behaviour through the evidence of their experience.

ROOM 4



There are three floors to Room 4. Each is a screen tall to visually isolate the three main arrangements. The crystals on the ground floor lure the player into Minicula's path. Transforming before removing the unit block ceiling allows the player to realise that, unlike the count himself, Vampire Bat Wario cannot pass through solid objects. Similar to the Zombie Wario arrangements, the player needs to learn their way out of the transformation. The light just above the unit blocks limits Vampire Bat Wario to the ground floor, proving that the Minicula's only there to provide a brief introduction to the transformation.

The Men'ono is placed between the lock (unit block passage) and key (slope) on a long, empty floor. Wario must interact with the enemy to reach the key. Thanks to the extended floor, the player has enough time to evade. The crystals bait the evasion. The arrangement also reveals how Men'onos can walk up slopes.

After the Vampire Bat Wario introduction on the ground floor, the top floor tests the player's ability to manoeuvre the bat. The crystals (rewards) arranged in cascading lines and lamps (threats) near the floor and ceiling elicit vertical movement with the flap mechanic. The light deters backtracking, but only on the basis of appearance as Vampire Bat Wario can fly past the light fixture. The seemingly irrelevant Men'ono is a martyr for players to see that Vampire Bat Wario destroys enemies by touching them.

On the first floor, the lone unit block in the wall leads the player to another clue, the ominous glow behind it. If the player uses this information and a bit

of deductive reasoning when they reach the jewel piece chest, they should realise that Wario can break through the terrain to access Room 4.5.

Some of the crystals are arranged in cross formations, subtly playing up the horror theme.

ROOM 4.5



This puzzle is double-locked. The diamond is the reward, the right-hand block's height is the lock, and the rock is the key. The rock is hidden in an isolated area outside the main bounding box. Wario must break the left-hand wall to reach it. As with Room 7.5 in Monsoon Jungle, for some inexplicable reason only the top half of the wall is breakable. Unlike that particular room though, the clue leading to the key (the blocks next to the wall) is sufficient.

ROOM 5



This large room is packed with blocks and Harimen for the same reasons as Room 3. The nooks and crannies between the posts, blocks, and unit blocks give Yurei plenty of chances to grab the spoils before Wario. At the unit block before the sheer drop, the camera calibrates to the larger bounding box of the lower area, shifting to the right and revealing the lone diamond in an otherwise empty night sky. With the bait set, the player should have no qualms about making the leap into the unknown.

In the lower area, the crystals by the slope and curious unit-high crate block in the wall persuade the player to ROLL. Doing so, after removing the thick block and jewel piece chest obstructions, leads Wario to the music CD. It's more likely that the player will stumble upon the purple pipe by using the slope next to the silver chest to exit than using their association skills to extrapolate that a unit-high path of breakable terrain lies under the staircase on the opposite side of the room. Without clues to assist the player, finding the puzzle pipe is guesswork. If the staircase's bottom step was also a unit-high crate box, the puzzle wouldn't be so opaque.

The arrangement hinges on slopes as ROLLING breaks blocks, but usually returns Wario to the neutral state some distance from the spoils, leaving Yurei enough time to fly down and pinch the rewards.

ROOM 6



Unit blocks are the locks. Slope blocks are the keys, but they're dependent on the switch block. The upper row of unit blocks, visible as Wario CLIMBS the ladder, and slope blocks to the left of the switch bait the player to participate in the optional arrangement. The slope blocks are in screen view of the switch so that the player can see the relationship between the two level elements first hand. The terrain between the slope and unit blocks centres the arrangement around ROLL JUMPING and reflex skills. The Men'onos' spoils are the reward. The crystals persuade the player to full JUMP. The mechanic holds Wario in the Skeleton Bird's range. The floor is a through platform so that if Wario gets hit, the player reviews the role of through platforms and light sources under the Zombie Wario transformation. The lack of leeway around the Men'ono stresses reflex skills and encourages the player to SMASH ATTACK.

ROOM 7



The posts slow Wario down as evident from the full JUMP it takes to climb on top of them. Post-fold, they build tension as they hold Wario's horizontal position, making it easier for Yurei to snag the Keyzer. Gating in the Harimen and with crystals overhead, the arrangement persuades the player to ATTACK JUMP from post to post. The crate blocks fill the passage for one reason: to have Wario generate more spoils, thereby reminding the player one last time of Yurei's presence. The red crystals lead the player into a not-so-secret secret room.

ROOM 7.5



The currents and crystals get the player to concentrate on the patterns in the water and follow them accordingly to reach the rewards and avoid the soft punishments. The light, patterned background makes it a little difficult to discern the currents. When Wario nabs the jewel piece, the diamond on the other side of the wall enters view, prompting the player back into the water.

The crate block underwater and bounding box that it rests against create the illusion that Wario's reached a dead end. These types of arrangements, where the game presents an odd or seemingly impenetrable situation, can only be solved by thinking like a game designer and being critical of the arrangement's intent. In this case, questioning why the currents would lead to a dead end. Once the player proposes this question to themselves, it doesn't take long for the pieces to fall into place.

The pipe returns Wario to the left of the crate-block-filled passage in Room 7 as the player might clear a few more blocks on the way through and once again summon Yurei.

ROOM 8



Room 8 has two arrangements, one pre- and the other post-fold, both defined by the state of the frog blocks. The pre-fold arrangement sees Wario in pursuit of the diamond. The player can choose between platforming their way up or flying in as Vampire Bat Wario. Given that the frog block platforms obscure most of the flying paths, the arrangement makes platforming the easier option. The implicit Harimen tutorials in the outside rooms come to a head here where demonstrating how to defeat the enemies simplifies the platforming.

The post-fold arrangement sees Wario in pursuit of the Keyzer. The lamps create passageways which offer choice. Touching a lamp before Vampire Bat Wario has the Keyzer sends him back to the ground for a retry—convenience punishment, as is usually the case post-fold.

By claiming the diamond pre-fold, the player brings the Keyzer into view, giving themselves the information needed post-fold. One arrangement dovetails into the other.

THE FOLD

The fold is a pure fold. With the Keyzer by Wario's side, Yurei pursues Wario more aggressively in the outdoor areas. Inside is a much breezier affair as the Miniculas and Skeleton Birds provide little resistance. In Room 1, the trip to the sewers can be a particularly nasty soft punishment.

SAPPHIRE PASSAGE: ARABIAN NIGHT

LOWDOWN

Passage: Sapphire Passage

Level Number: 2 of 4

Visual Theme: An Arabian palace and village

Game Idea: Riding a magic carpet

Key Level Elements: Magic carpets, water, lamps

Folding: Reroute

Fold Measures: Frog blocks, height, pipes

Enemies: Mayu Birds, Skeleton Birds, Onomis, Goggley-Blades, Spiky Balls

Number of Enemies: 42

Heart Medallion: No

Number of Floating Hearts: 11

INTRODUCTION

Arabian Nights is similar to Crescent Moon Village. Wario travels through the streets and buildings of an abandoned hamlet at night, switching back and forth between the main game idea and the Zombie and Vampire Bat Wario arrangements, albeit in a less rigid fashion. If it wasn't for the enemies and night time setting, the Middle Eastern village would hardly qualify for the horror theme. The magic carpet is the game idea, an ideal fit for the context.

GAME IDEA

The magic carpet, controlled by the height of Wario's JUMP and the direction he's facing, provides a unique way to navigate space. The rug constantly drops to the ground. When Wario JUMPS on the rug, it follows him, undercutting the JUMP. By continually JUMPING, the player can keep the rug aloft. When on the rug, it falls in the direction Wario faces. Because the carpet can't move horizontally without the vertical height to fall and can't move vertically without shifting horizontally, the direction Wario faces and the height of his JUMPS are interdependent. By micro-managing the push-pull relationship between the two axes, the player can steer the carpet through the arrangements.

Zombie and Vampire Bat Wario return and are developed in between the carpet arrangements.

GAME IDEA TIMELINE

Magic Carpet: Restricted tutorial – Restricted tutorial in a larger area, Mayu Birds added–Using the carpet as a platform to enter doors, continued practice – DASH ATTACKING off the carpet – Freer practice with more rewards and fewer threats, only one rug and plenty of ways to lose it, maintaining the position of the rug–Water added, rugs can now be destroyed, need to keep the rug in play–Greater risk/reward while keeping just one rug in play

Zombie Wario: Descending through platforms–Avoiding Skeleton Birds while ascending floors, passing through Spiky Balls

ROOM-BY-ROOM ANALYSIS

ROOM 1



An empty room that isolates the vortex from the restricted practice.

ROOM 2



The carpet rests to the left of the door so as not to distract the player from the distinct blue pipe at the edge of the screen. The pipe leads to Room 11, but progression is limited by a unit block. The silver chest is visible in the bottom corner of the screen. Room 2 sets the stage for Room 11's short-term memory exercise.

The door at the top of Room 2, out of screen view when Wario's on the ground, is the real exit. Height is the lock. The magic carpet is the key, however, the player's not aware of it yet. The crystals do all the teaching by getting Wario to JUMP above the rug. The carpet rises and the player's left to figure out the rest. The platform and frog block outlines clue the player in on the door. The small room limits the space that Wario can fly around in and thus the player's freedom.

ROOM 3



After demonstrating basic proficiency with the carpet, Room 3 opens up into freer practice, but with threats to manoeuvre around, building mastery. The Mayu Birds are such threats. Their fangs point downwards, taking advantage of the required ascent to elicit more controlled jumps. Bumping into a Mayu Bird from the side nudges the enemy out of the way. The recoil and bounce back can send Wario to the ground, so the punishment is potentially twofold. Jumping on a Mayu Bird's head destroys it.



Underneath

Height and frequency of JUMPS

Next to

Mayu Bird's sways and Wario's horizontal position

Above

Wario's fall and the knock

Since the Mayu Birds' ability to control the player depends on Wario's relative vertical position and Wario starts out below the enemies, the magic carpet arrangements are initially restricted and challenging, before becoming freer and easier. At first, the player's confined to the area below the Mayu Birds and must control the height and frequency of Wario's JUMPS so as not to touch their fangs. When Wario's level with them, the player has more vertical space to work with, but needs to be cautious of their sways and Wario's relative horizontal position. From above, the player only needs to be mindful of the vertical distance between the two parties. Because the spatial dynamic changes at each height and with each sway, the player needs to constantly adapt. These arrangements are all about considering the implications of Wario's movement in regards to the limitations of the rug and spatial dynamic with the Mayu Birds.

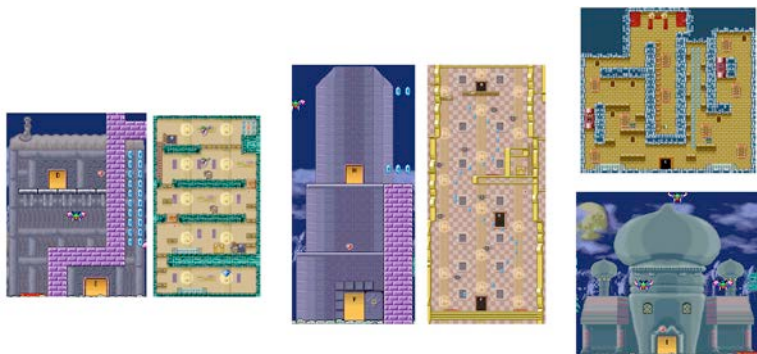
As with *all* the magic carpet rooms, the doors are high above the ground and the rewards are even higher. Rewards, like the punishments, are twofold as reaching them makes it easy to then drop down to the door.

The crystals invite the player down to the lower area where the carpets lie. As with the wheel platforms, when a carpet is far enough off-screen, it'll respawn in its original position, granted that that location isn't itself on-screen. The distance between the floor and topmost platforms and left- and right-hand platforms is large enough that Wario can plant a rug on an upper platform, fall to the ground, move away from the original spawn area (if he lands within it), and then back into it to have the rug on the platform respawn in its original location. Two rugs are used so that when the player moves away from the rug's original spawn area, there's another carpet waiting for them. Thus, they're likely to use that rug and not allow themselves to pick up on the respawning trick, which is somewhat jarring.

The player can park two rugs on one of the lower platforms without Wario being far enough from either of the rugs for them to respawn in the process. When Wario then returns to the floor, it's absent of carpets. To respawn both rugs, the player needs to move to the opposite side of the floor to bring the

spawn point closest to the platform with the rugs on it out of view. When they return to the side of the floor closest to the platform with the rugs on it, the rug on that respective side will have respawned. Moving back to the opposite side of the floor sees the other rug respawn. If this all sounds terribly confusing, please check the video reference¹ where I demonstrate this trick in action.

The Mayu Bird under the right-hand door allows Wario to STOMP JUMP up through the platform. The floating heart draws the player's attention to the diamond and crystals on the other side of the wall, informing them that Room 3 is part of a larger outdoor area. The invisible ceiling prevents Wario from clearing the wall though.



The buildings in the background of Rooms 3, 5, and 7 are the same shape as the rooms they represent. There's visual continuity and foreshadowing between the interior and exterior areas.

¹ Rug Respawn Trick—<http://youtu.be/xFY08FJy6r8>

ROOM 4



Room 4 introduces Onomis and builds off Crescent Moon Village's Skeleton Bird arrangements. The focus is on Zombie Wario's invulnerability and slow walk. Unlike Crescent Moon Village, Onomis and Skeleton Birds aren't supported with level elements that make them more difficult to avoid (which is necessary for the restricted tutorial). Rather, each floor is empty, leaving the player to draw on their familiarity with the enemies' movement patterns to face them head on. The wide floor acts as a stage for the Onomis to sprint towards Wario and the player to realise that they're reskinned Men'onos. The Skeleton Birds allow the player to witness the Onomis sprint to their death, into Zombie Wario, and learn that Wario is invulnerable in this state. This sets the context for the Spiky Ball arrangement in Room 9.

On the fourth floor, the crystals persuade the player to cross the Skeleton Bird. On the third, it's mandatory. Through platforms and lamps are always in close proximity. The third and fourth floors quickly review the transformation, before the first presents an optional Zombie Wario puzzle.

The through platform to the left of the pool of water is a visual marker of an entrance to a secret area. To pass through the platform, the player must destroy the left-hand block, transform into Zombie Wario, and make the slow

crawl down at least three stories. The Skeleton Birds (far from the secret area), extended length of the floors, and prolonged, snaking route (due to the crate blocks) increase the time commitment needed to claim the reward and soft punishment if the player fails. The arrangement has the player showcase Zombie Wario's painfully slow walk.

The role of the lamps, as aids or obstacles, depends on whether the player pursues the secret area. The jewel piece chest forces Zombie Wario to touch the lamp. This way, Wario reverts by water on the left and light on the right. The arrangement covers both means. The lamp prevents Zombie Wario from getting stuck between the chest and wall, forcing a hard reset.

ROOM 5



Height limits Wario to just this bottom area for now.

ROOM 6



Back to the magic carpet idea. The crystals persuade the player to follow the windy path around the Mayu Birds. The verticality puts the player's progress in constant jeopardy as one fall means starting from the beginning. The platform with the jewel piece chest acts as a halfway checkpoint. A spare rug waits on

the lower arm as when jumping up onto the ledge, it's possible for Wario to make the jump, but the rug, sitting slightly below him, to catch on the platform. If the player then loses the spare rug, Wario must return to the ground floor as there's not enough space on the platform to put the carpet's spawn point out of screen view. The spare rug is to the right and the path of crystals bends to the right so that the player brings the jewel piece chest into view. The ground floor rugs are spaced similarly to those in Room 3, allowing for respawns without manually resetting the arrangement. Since Wario might pass through this room multiple times as a result of falling back into Room 5 from Room 7, the arrangement's not a huge leap in difficulty over the prior rooms.



Good thing that there's that second rug.

If the player realises that the G doorway is more than window dressing, with the rug in active use, it's not difficult to put two and two together. The identical door frame is the visual clue. The arrangement calls on the player's observation (knowledge).

ROOM 6.5



Initially, the purple pipe seems like a decent enough reward. The carpet has the player bring the diamond into view and kick off the upper arrangement. The puzzle hinges on the insufficient runway to DASH ATTACK the thick block. With only the platform and carpet, the player's left to experiment. The trick is that when the carpet isn't touching anything, Wario can DASH

ATTACK at either edge of the rug and build up charge. Once the rug touches a wall or surface, Wario DASH ATTACKS off it. If the rug's already touching a wall or surface (for example, leaning up against the wall), Wario DASH ATTACKS off the carpet as if it were a platform.

ROOM 7



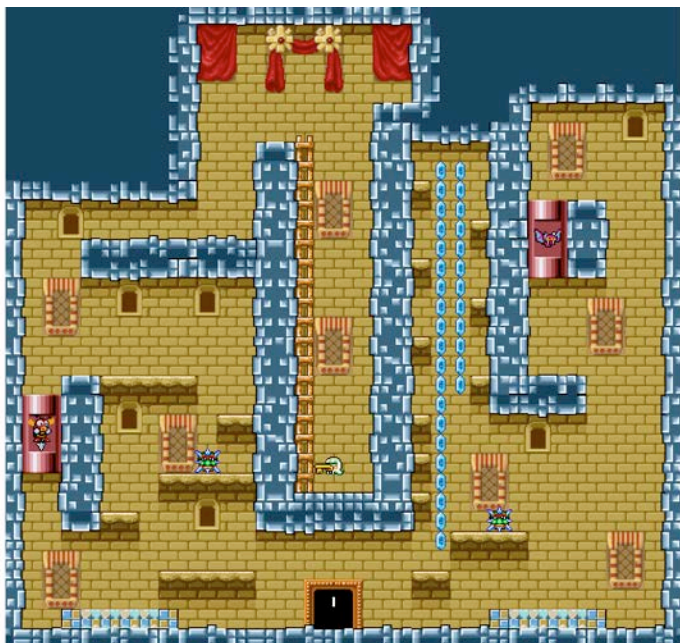
The magic carpet game idea continues outside. Let's note the variation:

- » There's more rewards.
- » The room's larger.
- » There's relatively fewer enemies.
- » There's only one magic carpet.
- » The player may have to backtrack through Room 6.
- » The space is divided by walls, platforms, and cutout areas.

More rewards, more space, and fewer enemies suggest one thing: freer practice. With only one rug, more geometry for it to get caught on, and crystals encouraging exploration of the entire room, the arrangement focuses on the player maintaining access to the rug.

The crystals to the right of the door lead the player down to the floor. The door to Room 8, where the player can nab the Keyzer, sits between the crystals and carpet to encourage the player to enter before advancing upwards with the rug. The right-hand wall can be broken with a DASH ATTACK JUMP. The clues are in Room 9.

ROOM 8



The transformation tubes make their first and only appearance. The Keyzer is the goal. Height is the lock. The key, the Vampire Bat Wario tube, is itself locked behind the Puffy Wario tube.

The Keyzer floats above the door in an enclosed area, giving the player an immediate purpose. Crystals are also in view and lead the player up the ladder of platforms to the Minicula tube behind the wall. When Wario returns to the ground, it's apparent that as of yet there's no way to reach the mysterious level element.

The player has nowhere to go, but left. The platforms border the Puffy Wario transformation tube, so the player brings it into view on the ascent. The only way to interact with the tube is to fall through it. Doing so removes the superfluous Spiky Balls and spawns two Beezleys on either side of the room. The sound effect and flash of black inform the player that the arrangement has been altered.

The top-left horizontal channel prevents Puffy Wario from reaching the Keyzer. With a Beezley on the right though, there's finally a means to access the Vampire Bat Wario tube. Wario can float up or fall through the tube. Miniculas replace the Beezleys, and Vampire Bat Wario is free to claim the Keyzer. I've no idea why there's a ladder next to the Keyzer when Vampire

Bat Wario can't use it. Through the placement of game elements, the game designer generates curiosity, presents the problem, and then leads the player to find the solution.

ROOM 9



Zombie Wario returns. Despite the familiar formula of wide floors, Onomis, and Skeleton Birds, starting from the bottom has a different dynamic, with Skeleton Birds as threats and lamps as aids. The arrangement isn't about maintaining Zombie Wario over a long distance, but avoiding the goo projectiles. Since the lamps are below the Skeleton Birds and the floors are made of through platforms, if Wario transforms, the player can reduce backtracking by recalling the horizontal position of the lamps and falling through on top of them (short-term memory skills). Like Room 7, Room 9 punishes through inconvenience. The through platforms are close enough together that Wario can STOMP JUMP up floors, off the Onomis.

The red crystals underneath the through floor pique the player's curiosity. The Skeleton Birds provide the means through. The lamps and pool of water save on recovery time. On the ground floor, the blue crystals reveal a second secret area below. A secret within a secret, where the clues to each are identical. The player needs to remember the relative position of the underground path and backtrack to not just recall, but apply their knowledge in Room 7. Where the arrangement elicits the player to ascend, the secrets elicit the player to descend.

At the top, Wario can CROUCH WALK under the Spiky Balls or Zombie Wario can walk right through them. The slow speed of the former leaves Wario open to the Skeleton Bird's projectiles, increasing the likelihood that the player will realise the latter.

As Wario ascends the floors, the crystals on the other side of the wall enter screen view. On the right, the gap between the platform and crystals keeps the two out of the same screen space, forcing the player to remember the crystals' relative location from their ascent on the left (short-term memory skills). The gap in the wall allows them to retry (test teach test). Because only Zombie Wario can claim the crystals, the player has even more reason to learn of his ability to pass through Spiky Balls.

To reach the frog switch, Wario must walk across the frog blocks. Flicking the switch kills the bridge and, thanks to the low ceiling, prevents backtracking.

THE FOLD

The fold is a reroute. Wario is sent into the sewers where the magic carpet game idea is beefed up through the addition of water. Wario can't use the rug to fly back into Room 9 from Room 10 as the carpet disappears in the transition. Frog blocks prevent backtracking in Room 2.

ROOM 10



At the beginning of Arabian Nights, carpets are freely available. Some way into the level, the player can lose them, but return to their spawn points for another. Near the end of the pre-fold, when Wario loses a rug, the player may need to either manually reset the arrangement or backtrack through prior rooms. In Rooms 10 and 11, water destroys the carpets on impact. Throughout the level, the magic carpet game idea is developed by making it harder to keep the rug alive. Water not only removes rugs, but slows down the process of manually respawning another one. Factor in the post-fold timer, and it's now more critical than ever to keep the rug in play.

If the player's just careful and keeps Wario on the rug, how can water be an issue? Risk/reward. Large arrows made of crystals persuade the player to jump off the carpet and SMASH ATTACK into the water to break the blocks concealing various secrets. The crystals next to the Spiky Balls offer smaller rewards for less risk.

The arrangement makes several concessions to ease the player in as they familiarise themselves with the new threat:

- » There are only two Spiky Balls.
- » The arrows aren't far from the ledges.
- » On the left, Wario doesn't need to use the rugs to SMASH ATTACK the block...
- » ..which means that there are two rugs for the first arrow.

In Room 11, the training wheels are removed.

The jewel piece chest leads Wario up to the second arrow. The currents speed up the process of entering and exiting the secret area. Claiming a reward shouldn't double as a punishment.

ROOM 11



A riff on Room 10, but what was taught before is now subverted. The player that doesn't take the bait, the arrow of crystals, is rewarded with the music CD and can then return to claim the diamond underwater. This arrangement pits the player's trained behaviour against the seed planted at the start of the level, the silver chest. It's a test of impulse against consideration.

Risk/reward is elevated as there's more crystals, diamonds, and Spiky Balls, but only one rug and an underwater current that works against Wario. Players that forget about the music CD are given a second chance proposition when it enters screen view on the climb up to the blue pipe.

The pipe takes Wario to Room 2 where a frog block ceiling enforces a direct route to the vortex.

SAPPHIRE PASSAGE: FIERY CAVERN

LOWDOWN

Passage: Sapphire Passage

Level Number: 3 of 4

Visual Theme: A volcanic cave, a frozen cave

Game Idea: Fire and ice

Key Level Elements: Lava geysers, frozen lava geysers, iced platforms, slopes

Folding: Environmental upheaval

Fold Measures: Frozen lava geysers

Enemies: Iwao, Yukiotos, Icicles, Snow Clumps

Number of Enemies: 18

Heart Medallion: No

Number of Floating Hearts: 9

INTRODUCTION

Fiery Cavern is a divergence from the horror theme, an underground chamber divided into two instances: fire and ice. Each state determines the game idea through the environment. The pre-fold volcano is about burly Iwaos and avoiding lava. The post-fold snow cave is about Yukiotos, icicles, Frozen Wario, Snowman Wario, icy platforms, and falling snow. Form fits function distinguishes the interactive elements from the contextual elements. Lava rises and falls, pointy icicles are dangerous, while sparkly platforms are slippery.

The freezing over of the volcano at the fold, an organic modification of the level which creates a second instance out of the original's design, makes Fiery Cavern particularly memorable. Each state allows and disallows access to different areas of the cavern. Because most of the inaccessible areas are partly visible from the outside, there's a sense of curiosity that permeates throughout the level. Pre-fold, the inaccessible post-fold areas foster player interest. Post-fold, reaching these areas and piecing together the relationship between the two states satisfies the player's curiosity. (The brain likes to compare data and check for patterns).

Unlike most other levels, the Fiery Cavern has no Spearmen-esque enemies. There's no need for these pawns as the Iwaos and Yukiotos that populate the cavern already take a good chunk of the player's time. They're large pieces of the level design tool box. Iwaos because of their deep interplay. Yukiotos because their ice breath takes a long time to recover from. If other enemies were included alongside them, they'd bog the player down and protract the experience.

GAME IDEA

The dichotomy of fire and ice, power and resistance, is the game idea for the Fiery Cavern.

The fire game idea is defined by the Iwaos and lava geysers. These game elements are hard, health-reducing punishments which represent power. The lava geysers because they stop Wario in his tracks with a wall of fire. The Iwaos because of their visual form, quake, and boulder throwing abilities. The balance of power between Wario and the Iwaos, dependent on their relative positions, is a secondary theme throughout the pre-fold. Oddly enough, despite the context, Flaming Wario isn't used.

The ice game idea is defined by the timer, icicles, Yukiotos, slippery surfaces, clumps of snow, and purple ice blocks. These game elements are mostly soft, convenience-based punishments which represent resistance. The Yukiotos, clumps of snow, and slippery surfaces push Wario in directions that the player may not wish for him to go.

GAME IDEA TIMELINE

Fire: Lava geysers introduced—Iwaos introduced in a subordinate position, some lava pits aren't active—Clearing small platforms against rising lava, Wario's in the subordinate position against the Iwao—Height disadvantage, rising lava and Iwaos are combined, clearing small platforms against falling lava, a fair match against the Iwao—DASH ATTACK JUMPING over a large lava pit – Strong power advantage to Iwao on the slope

Ice: Yukiotos introduced – Icicles, Snowman Wario, clumps of snow, and purple slippery surfaces introduced – Snowy slippery surfaces and purple ice blocks introduced—Timing of icicles and Yukiotos while descending the slope—Yukioto's ice breath against slippery floors—Longer horizontal stretches and more Yukiotos for increased convenience punishment

ROOM-BY-ROOM ANALYSIS

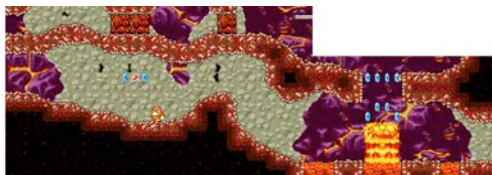
ROOM 1



The bursts of lava that leap from the pits add risk and time factors to the platforming. Risk because Wario loses health when he touches the lava. Time because the pits are only safe to cross at certain time intervals, once the lava foams down. The risk gives the player a reason to follow the lava's timing. The lower the lava, the easier it is to clear the gap, but the sooner the next burst comes. With this in mind, crossing the pits isn't a simple choice made on whether or not the lava's clear at the time of the jump, but whether it'll still be clear as Wario makes the jump. The geyser's time element has two points of consideration, two layers of engagement.

After Wario enters Room 1, the lava fires out of the pit before he can reach it, forewarning the player. If Wario ATTACK JUMPS over the pit, he won't bounce back on the grey platform. Its placement informs the player that it's a through platform.

ROOM 2



The Iwao sits at the base of the dip, where Wario has the height advantage over the enemy. The topographic leniency eases the player into interaction. The crystals and floating heart in the path of the Iwaos' boulders give the player a reason to engage. The blocks are curiosity markers.

At the point with the two black puncture marks in the cave wall, the camera shifts to a lower, screen-tall bounding box which covers the right-hand arrangement. This way, when Wario jumps over the lava pits, the camera remains stationary, not obscuring the player's view of the ground.

Only the middle lava pit is active. The inactivity of the other two informs the player of the pits' variable behaviour. With two states, active and inactive, the player needs to be observant and detect the status of each pit before they cross. The crystals can only be reached with a full JUMP, dissuading the player from making short, risky jumps. The crystals reward the player for modelling the correct action.

ROOM 3



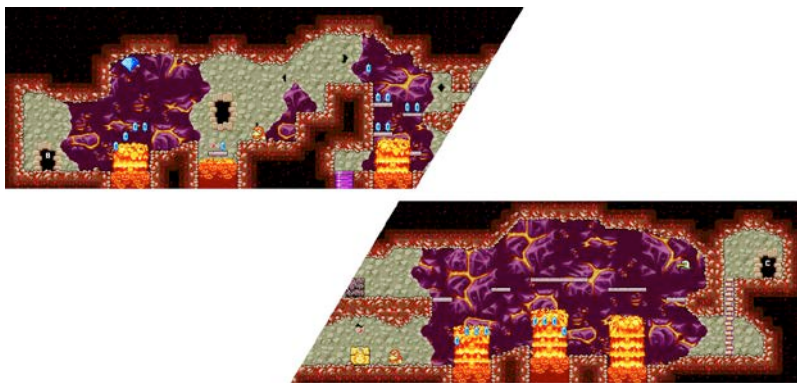
Small platforms form a staircase in the path of the lava geyser. The arrangement breaks one action, leaping over a pit, into several smaller actions, hopping from platform to platform. More actions, more chances of making a mistake, and thus greater risk. By fragmenting the interaction, the player's given a step-by-step visual mapping of Wario's relative position to the lava as he ascends the platforms. Because there's greater risk of error and the player receives constant visual feedback on how close Wario is to touching the lava, the upwards climb has a "lucky escape" feel to it. By comparison, getting nipped by the lava on a single jump takes the player by surprise.

The blue crystals lining the platforms contrast against the red background, quickly informing the player of where to direct Wario's jumps. The player knows to break the block next to the second platform as there's nothing on the other side of it. ATTACKING it though is risky, since the bounce back briefly leaves Wario vulnerable to the rising lava. Once inside, the same logic that the player got in with prompts them to ATTACK the terrain to the right (context setting). To much surprise, the terrain doesn't break, but the bounce back knocks Wario high enough to clear the block above him. The newfound vertical leeway suggests one thing: SMASH ATTACK. One clue in the environment leads the player to stumble upon a series of them. The purple pipe is the reward.

This time, the Iwao is given the height advantage. Notice how his boulder throws are much more effective? The crystals and floating heart lure the player into the dip.

The right-hand lava geyser reaches up past the block. The block slows Wario down, giving the lava enough time to rise up into screen view and warn the player of its presence. The door is placed inside the alcove so that Wario must cross the lava pit twice. Regarding the first jump, because Wario is well above the base of the geyser, the lava can't catch him on the sudden uprise, however, with the base out of screen view, the player also can't see when the lava's on the rise. The advantage of height is balanced out by the disadvantage of sight. Since the lava rises higher, the player needs to wait longer before making the second jump. The door without grounding and ladder above are curiosity markers.

ROOM 4



Height is again used against the player. For the first jump, the raised landing area forces the player to full JUMP or ATTACK JUMP and prevents Wario from swimming across if he gets hit by the lava and falls in. For the second jump, the small platform helps Wario get into position to attack the Iwao while the lava's down. It's perhaps more trouble than its worth though.

To see the whole arrangement, the player needs to move Wario to the ledge just left of the small platform. The Iwao walks back and forth between two positions where at each point it throws a boulder towards Wario. When the Iwao's close to the edge, the boulder bounces across the small platform and onto the ledge Wario's standing on. When the enemy's away from the edge, the boulder bounces across the small platform and into the raised tip of the ledge. The platform services alternating boulder attacks¹ which keeps the player multitasking as they avoid incoming boulders and wait for the right time to make their way across.

1 Alternating Boulder Attacks—<http://youtu.be/0znryvgM4I8>

The arrangement has three timers: the rising of the lava, the boulders entering Wario's range, and the quake when the lwao spawns a boulder. The player needs to track each timer and wait for the opening between them, when Wario's free to pass.

The quakes interrupt Wario's animation which can throw off the player's timing, subvert their planned approach, and force adaption.

The lwao never stands on the left-most edge, so Wario always has a free gap to jump to. Landing on the edge puts Wario right in front of the lwao. The enemy will likely throw a boulder, allowing the player to see that when Wario's up close, the boulders don't touch him. This minor detail plants the seeds for strategies to come.

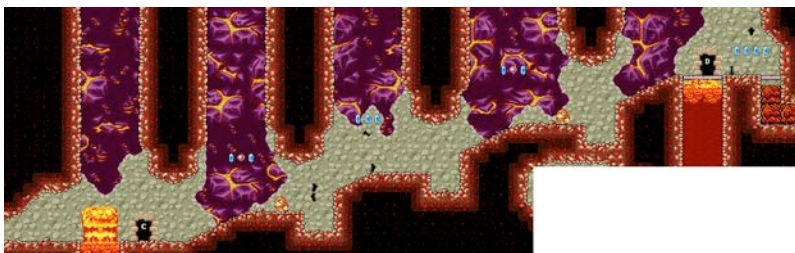
The diamond in the corner and door above the small platform are curiosity markers. Climbing up the first step of the staircase, the secret alcove with the purple pipe sits in view in the corner of the screen (foreshadowing).

In an inversion of the prior room's first arrangement, Wario descends the platforms lined with crystals while avoiding the falling lava. The player must follow the visual timer of the lava descending past the platforms to determine when to fall. Falling as soon as the subsequent platform becomes available gives the player more leeway to avoid the lava on the upward rise. Early initiative minimises later risk. The closer Wario is to the base, the sooner the lava will rise up again. The tension increases as the player knowingly leads Wario towards danger. All of this distracts them from the bottom platform leading to the purple pipe.

The lwao-Wario power relationship is equal on the flat surface. The ceiling is arched so the lwao can toss its boulders. The floating heart and jewel piece chest bring the player into the centre. Because the ground is flat, the player can't exploit the topography to dodge the boulders. They only have three options: move towards the lwao, move away from it, or be attacked. Having moved towards the enemy, the boulders fly over Wario's head. Having moved away from the enemy, when the boulders reach Wario, they're low enough that he can easily jump over them. The problem with this technique is that by the time Wario dodges one boulder, the next is already on its way. It's difficult to make any headway. The player's therefore pushed to realise what was implied by the free ledge two arrangements prior, Wario can't get hurt standing next to the lwao. Being in close also puts him in prime position to SMASH ATTACK the enemy. With the power balanced, the player is forced to understand their opponent or lose health.

The Keyzer comes into view when Wario CLIMBS the ladder. The player doesn't need to remember it though, as it's still there in plain view post-fold.

ROOM 5



The lava pit on the left prompts the player to enter Room 6.



On flat land, Wario can JUMP later (less reaction skills) as it takes him less time to reach the height needed to surmount the boulder. On the slope, with the boulder above him, the opposite is true. The height difference between Wario and the Iwao adds variation to the boulder dodges.

The slopes position Wario below the boulders so that the player must react (full JUMP) earlier for him to ascend to the height needed to safely clear the obstacles. The full JUMP gives the Iwao more time to spawn the subsequent boulder, shortening the intervals between dodges. The quakes interrupt Wario after he lands back on the ground. The boulder's bounce is more effective on the slope. If the player takes too long to react, they can retreat to flat land (where avoiding the boulders is easier) or hide in the corner of one of the pits (where the boulder will roll past Wario). The boulders can trap the player in a cycle of continuous backtracking. All of these components work to simulate a treadmill of endless boulder dodges (reflex tests).

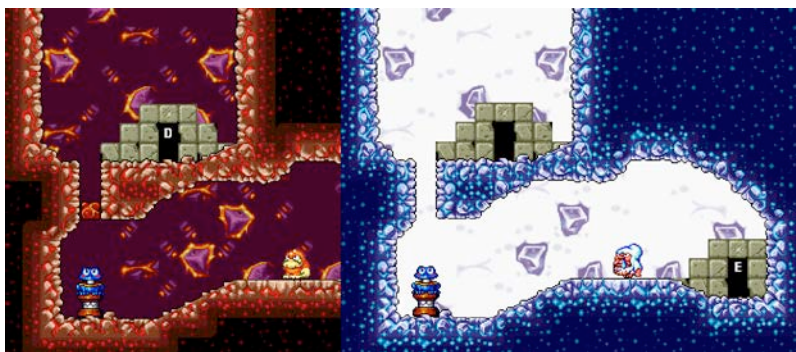
To the right of the door, the crystals reveal a secret area, adding coal to the curiosity train and foreshadowing the connection to the post-fold.

ROOM 6



A DASH ATTACK JUMP over a trio of active lava pits. The blocks and jewel piece chest lead the player to the crystals which model the path of the jump. The platforms overhead allow them to see the diamond prize and timing of the three lava geysers. They rise in the following order: left, right, and centre. The sequence has the geysers form a temporary wall of lava in the shape of the DASH ATTACK'S curved trajectory. The bounding box next to the jump point only shows the right-most geyser as it rises after the left-hand geyser and before the centre geyser, acting as an indication of the lava's average height. The longer distance makes the jump more hazardous as the further Wario jumps, the further he'll have to swim back to safety if he fails. Therefore, the more likely it is that he'll lose more hearts.

ROOM 7

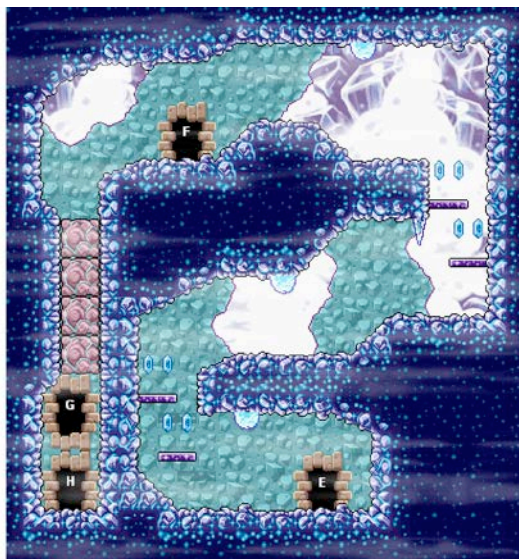


By breaking the block, Wario lands on the frog switch which blankets the cavern in snow. The player can see the Iwao transform into a Yukiotoke, indicating that the two enemies are related. The switch is high enough that Wario avoids the Iwao's boulders on the way down, but is aligned with the Yukiotoke's ice breath post-fold. The latter promptly reviews the attack in preparation for the following arrangements.

THE FOLD

The fold is an environmental upheaval. The cavern freezes over and the game elements pertinent to fire (lava and Iwaos) are replaced with those of ice (Yukiotoke, icicles, ice blocks, slippery platforms, and clumps of snow). With the lava geysers frozen, some rooms are cut off, others are drastically altered, while new rooms are opened up.

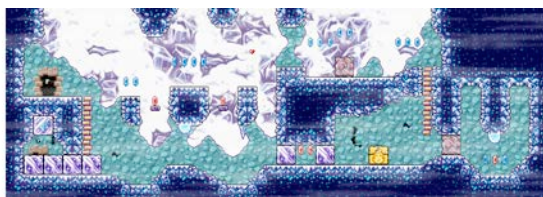
ROOM 8



Since the fold reboots the game idea, Rooms 7 and 8 must introduce the relevant game elements. Room 7 covers Yukiotoskos and Frozen Wario, so Room 8 handles icicles, snow clumps, Snowman Wario, and slippery platforms. The curvy route extends Wario's walking distance so that he passes more of these game elements and is therefore more likely to notice and react to them.

The player can see the doors on the left as they climb up. If they don't apply this knowledge and enter the door at the top, then they might break the blocks first, overlooking the fact that once they're gone, Wario can't reach Room 9. Because breaking blocks is an inherently liberating action, players are attracted to the square-shaped empowerments. This attraction, coupled with the wink-wink-nudge-nudge placement of the doors, can override the logic of visual evidence. The door at the top tests the player's reason against their impulse. On the other hand, the impetus of the timer also prompts the player to ignore what may appear to be an optional room. If the player can't find a way to the G door in Room 9, they can return to Room 8 and break the blocks.

ROOM 9

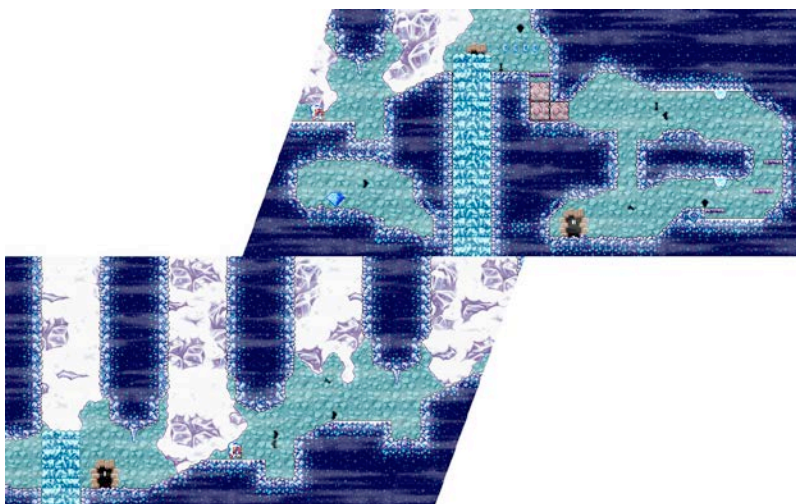


Only the upper set of platforms are in screen view when Wario enters, leading the player to follow the crystals, ignore the ladder, and assume nothing of the area below. Every non-diagonal inch of Room 9 is covered in snow. The initial area is a soft punishment playground for the player to notice and adjust to the slippery surfaces. The purple blocks and platforms are also slippery.

Although absent in the image, a Yukiotoke is to the right of the top-right block. The crystals encourage the player to climb over the block instead of breaking it. This way, the Yukiotoke can blow an ice breath into the block and the player can see that the projectiles don't pass through solid objects. Both the block and the raised ledge prevent Frozen Wario from falling into the area below.

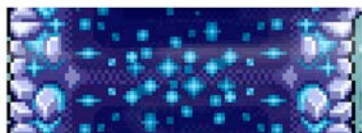
Below, the means to snowball through the ice blocks is hidden by the bounding box. The block in the wall is the clue. Once Wario has ROLLED on through, the diamond can be freed from the ice block in the only apparent way how, JUMPING.

ROOM 5



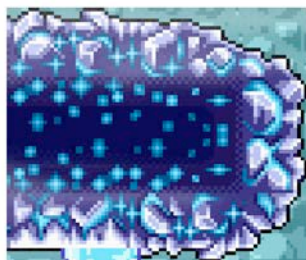


Remember that backdoor entrance? This is where Wario ends up. To reach the diamond, Snowman Wario must roll through the wall and frozen geyser. There are two clues. The first is the ceiling to the secret area, which sits in view when Wario's standing in the third pit pre-fold. Not only is this information insufficient and difficult to spot, it's also isolated from the application post-fold. The second is the congregation of blue sparkles in the terrain, which doesn't stand out much either. Because the same blue sparkles line the inner edge of the terrain, when a chunk of ground's only 2 units wide, the sparkles overlap, making the regular terrain appear almost identical to the breakable terrain.



Above - Breakable Terrain
Right - 2 Unit-wide Terrain

Looks pretty similar to me

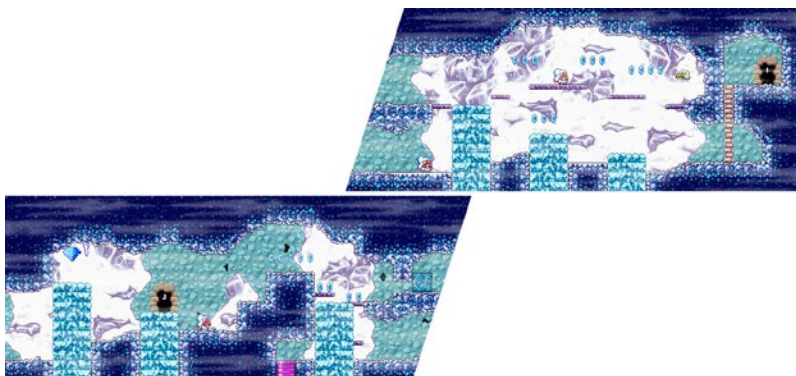


The ground is a mixture of normal and iced surfaces where the latter is only present in the form of frozen geysers and straight flats with Yukiotos. The pattern helps the player differentiate between the two surfaces.

The Iwao arrangements are repurposed with icicles and Yukiotos. The icicles form on the ends of the columns, in Wario's path, forcing the player to wait for them to fall before proceeding. Their placement makes the timer of their looping animations apparent. When jumping to a slippery flat, Wario moves into both the icicle's and the Yukioto's range. To clearly navigate the arrangement, the player must follow the icicle's timer (timing), promptly dodge the ice breaths (reflex, dexterity), and be cautious of the slippery surface (knowledge). The arrangement is particularly challenging in that it elicits a diversity of skills.

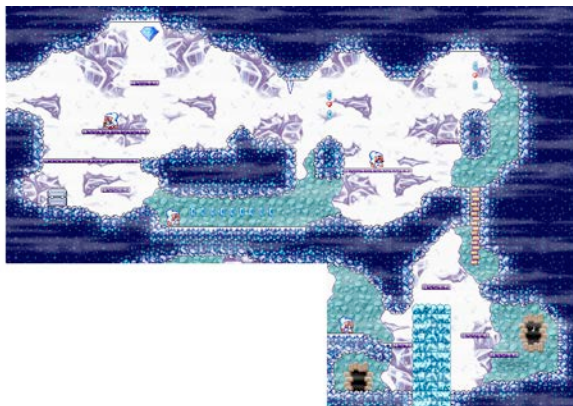
If the player gets Wario to the left of the first Yukioto, they can exploit the ice breaths to glide straight to the exit.

ROOM 4



As Wario enters, the Keyzer's visible, so the player has a target from the get-go. The extended horizontal space around the Yukiotos and vertical space below the slippery platforms increase the convenience punishment. Where height gives Iwaos power, length gives Yukiotos power. The close proximity of platforms keeps Frozen Wario in the upper area where the player can exploit the ice breaths to beeline to the Keyzer and block.

ROOM 3



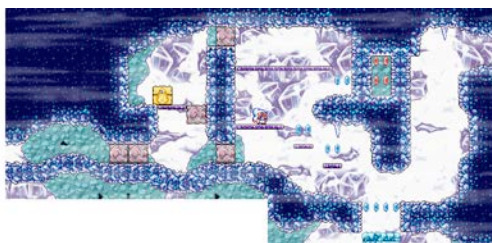
Wario enters through the previously inaccessible door. The frozen geyser is taller than the original lava geyser. Not that anyone would notice.

The channel with the Yukiotos and silver chest is 3 units tall. Wario and the ice breaths are each 2 units tall. There's not enough room to JUMP over the projectiles, leaving the player to deduce an alternative means of reaching the reward. CROUCH JUMPING over the ice breaths or stunning the enemy with

constant SMASH ATTACKS both work. The length of the passage initially keeps the Yukiotosoko out of screen view, drawing attention to the range and continuity of the enemy's attack. With limited visual assistance, the player must rely on the attack's timer.

The left-hand Yukiotosoko aligns with the centre pair of crystals and floating heart. Like the arrangement below, this one highlights the continuity of the ice breaths. Wario needs to STOMP JUMP off the Yukiotosoko to reach the diamond. The icicle knocks Wario into the gap below.

ROOM 2



The red crystals can only be accessed by DASH ATTACKING a path through the wall, building up charge from the limited runway between rooms. Both the runway and breakable terrain disobey form fits function. (The runway being split over two rooms, curved, and relatively short). Therefore, unless the player's written a book on the game, they'll most likely never reach the crystals and only end up frustrated by the tease.

The icicle above the platform grants minimal reaction time. If it falls on Wario, or Wario gets hit by the Yukiotosoko's ice breath, he's sent back to the lower gap. Timing is once again important. The jewel piece chest is placed above the exit as a visible reminder to stop the player from leaving without it. At the top, the bounding box makes the block-in-the-wall clue less obvious.

ROOM 1



The platforms lead Wario to the vortex.

SAPPHIRE PASSAGE: HOTEL HORROR

LOWDOWN

Passage: Sapphire Passage

Level Number: 4 of 4

Visual Theme: Haunted hotel

Game Idea: Hotel building structure

Key Level Elements: Doors, lights, switch blocks

Folding: The hotel

Fold Measures: Frog doors

Enemies: Men'onos, Miniculas, Skeleton Birds, Ringosukis

Number of Enemies: 31

Heart Medallion: No

Number of Floating Hearts: 9

INTRODUCTION

Set in an abandoned hotel at night, Hotel Horror returns to the Halloween theme. The stage has two layers that Wario moves between, the hallway and guest rooms. The hallways are patrolled by Men'onos, while the guest rooms contain isolated Zombie and Vampire Bat Wario arrangements. Neither covers much new ground.

Hotel Horror is a unique level in that it favours exploration over direct progress. It does so in the following ways:

- » The level structure deviates from the predictable vortex-on-the-left-frog-switch-on-the-right pattern of other levels. While there's still a linear path to follow, the unfamiliar, snake-like wind where the fastest route doesn't necessarily appear to be the shortest disorients the player and thereby encourages them to explore every room.
- » The maps in the guest rooms reveal the interconnected backend of the hotel and the room Wario currently occupies within it. With no maps in the hallway, the player needs to memorise the layout of the guest rooms and relative location of the room they'd like to reach. They then need to crosscheck this information against

the hallways so as to consciously progress without guess work. Remembering, recalling, and reassessing the data while simultaneously moving Wario through the hotel, fundamentally changing the information, requires more effort than most players are perhaps willing to invest. It's much easier to just explore every room than rely on the map.

- » Doors to optional rooms sit alongside doors to main route rooms so that the player can't differentiate between the two.
- » The optional rooms and outside stairwell encourage compulsive players to leave no stone unturned.

The colour of the hotel walls transition from aqua to red as Wario ascends the floors. The psychology grows more vexing as Wario reaches the frog switch.

GAME IDEA

The game idea is the hotel, its unique organisation of rooms and the freedom it affords. The best way to reach the frog switch is to follow the jewel piece chests. By doing this ourselves, we can see how the player's freedom only boils down to a few minor choices:

Enter first floor hallway¹

- » can choose to enter Room 102

Enter Room 104

- » can choose to go to second floor, but Room 203 is frog locked

Enter third floor hallway

- » can choose to go to Room 303 which is a dead end

Enter Room 302

- » can choose to go to Room 301 and around to Room 401 to get the Keyzer or down to Room 201 to...

Enter second floor hallway

Enter Room 202

Enter fourth floor hallway

- » can choose to enter Room 403 which can send Wario back to Room 303

Enter Room 404

Three of the five choices are inconsequential. The player only needs to follow the jewel piece chests and remember to return to Room 103/203 for the

¹ Yes, I've had to break away from the European naming convention as the door numbers are representative of the American system.

music CD, take the outside route to the Keyzer, and skip Room 403 pre-fold (it acts as a shortcut post-fold).

GAME IDEA TIMELINE

The five choices listed above.

ROOM-BY-ROOM ANALYSIS

The rooms are named after their respective door numbers and presented in the order Wario encounters them.

HALLWAYS

The hallways are patrolled by Men'onos and littered with blocks, crystals, and floating hearts. These game elements give the player more to do than just DASH ATTACK to the next door. Room 101 is locked and never opens.

ROOM 102



A basic Vampire Bat Wario manoeuvrability test. The Men'ono's placement near the door, where the player has minimal time to react, is common throughout Hotel Horror.



The switch ladders are only present in Room 104/204/304. The switch blocks are separated from the ladders so that Wario must cross paths with the Men'onos and Skeleton Birds. On the ground floor, the left-hand ladder allows the player to see the result of the switch first-hand. The crystals and floating heart persuade the player to then CLIMB the newly-formed ladder, making the switch ladder's function more pronounced.

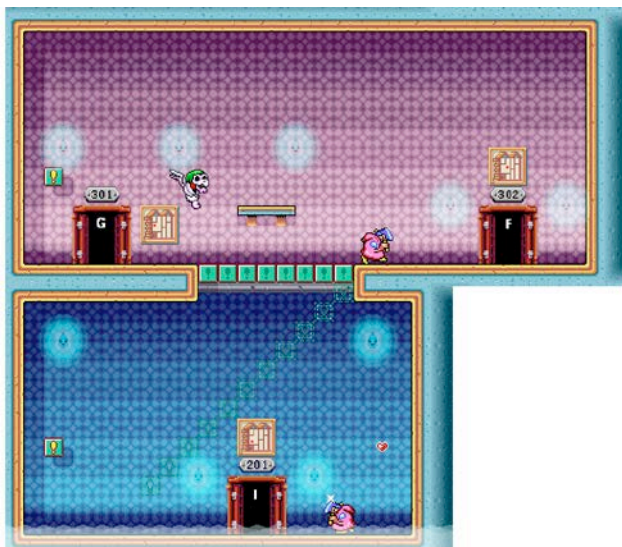
On the first floor, if Wario touches the Skeleton Bird's projectiles, he's forced down to the ground floor where he'll likely hit one of the raised lamps as he falls. If not, another is by the door for convenience. The 204 door is put between the ladder and switch block so as to prompt the player to enter and make a mental bookmark of the frog-locked door (short-term memory skills).

ROOM 303/403



This room is of no use pre-fold.

ROOM 201/301/302



The block outline bridge is active and the switch is on the left-hand side so that Wario must pass door 301 if he's to advance through door 201, making it easier and thus more likely that the player will take the outside route to the Keyzer. This is the most important choice in the hotel as without the Keyzer, the player must replay the level. The game scaffolds them to make the right choice.

The platform makes it easier for Wario to move between the two upper doors once the switch block's been flipped. The Skeleton Bird has maximum coverage over the junction. The stairs increase the punishment of being hit by a projectile as every step Zombie Wario falls is punctuated by a slow rising animation. The switch block at the bottom is unnecessary.

ROOM 401



The Kaentsubo, close to the door, gives the player little time to take in the arrangement before Wario transforms and they're thrown into the action. The Totsumen is superfluous as Wario transforms shortly after entering the room and Flaming Wario is invincible.

ROOM 202/402



Room 202/402 builds on the Vampire Bat Wario arrangements from prior levels through strong verticality. When Wario jumps to reach the Minicula, the floating heart comes into view and the player's given a distraction to chase. The diamond draws the player's attention to the lone rock, leaving them to figure out that the nearby wall contains a unit-high passage of breakable terrain leading to a purple pipe (secrets within secrets). This arrangement relies on the player's association of game elements.

ROOM 404



The thick block is the lock and the Ringosuki is a generator of keys. The two are separated by height, so Wario needs to PICK UP the key maker and move it next to the lock. The gap on the other side of the wall is the bait. Like the Men'onos and Kaentsubos, the Ringosuki can catch the player off guard when Wario enters. Allowing Wario to transform early can lead the player to prematurely remove the Ringosuki.

THE FOLD

The frog switch releases the frog locks, allowing Wario to enter Room 103/203. Room 303/403 and falling through the outside staircase as Zombie Wario are two potential shortcuts.

ROOM 303/403

The switch, blocks, floating heart, and Skeleton Bird are arranged to get the player to clear the blocks, flip the switch, transform, and then jump off the end of the purple plank. That way, Zombie Wario falls onto the lamp, reverts back to normal, and lands on the platform below. The arrangement is so contrived as on hard, there's a jewel piece chest on the platform. On normal though, the interactions are pointless.



Wario can enter from either door. The blocks draw out the platforming process, increasing the post-fold tension. The Skeleton Bird's range is too wide as it can float into the wall and fail to send out projectiles. No matter where Zombie Wario falls, he reverts back before he touches the ground. The lamps and Skeleton Bird contribute little to the arrangement.

GOLDEN PASSAGE

LOWDOWN

Passage: Golden Passage

Level Number: 1 of 1

Visual Theme: Golden Pyramid

Game Idea: Final exam

Key Level Elements: Chandeliers, break-away platforms, currents, lamps

Folding: Skirting along the fold

Fold Measures: Currents, underwater channel, Yukiotoskos

Enemies: Menhammer, Yukiotoskos, Men'onos, Skeleton Birds, Goggles-Blades, Ringosukis, Miniculas, Snow Clumps

Number of Enemies: 19

Heart Medallion: No

Number of Floating Hearts: None

INTRODUCTION

The Golden Passage pulls together content from the past sixteen levels and distills it into a final exam. Just like any school exam, the level is governed by a timer. Wario drops from the vortex onto the frog switch, kick-starting an extended timer of 9 minutes, 30 seconds. The countdown restricts exploration and puts the focus on the player's performance. With the frog switch at the start of the level, the Keyzer assumes the switch's place at the crease and the folded level design is maintained.

The other game elements similarly unify the level's design around the exam. Crystals, as aids which direct the player, are removed because they run counter to the game idea. Diamonds, which create risk/reward under a timer, serve their usual role. Currents, pits, water, enemies, and blocks punish the player for their mistakes.

GAME IDEA

Wario Land 4's mechanics and transformations, being the content of the exam, are the game idea.

GAME IDEA TIMELINE

Each room focuses on a certain part of the game system, so the game idea doesn't build.

ROOM-BY-ROOM ANALYSIS

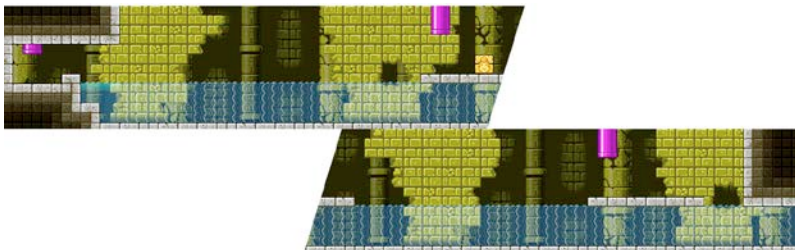
ROOM 1



Room 1 starts the exam with a review of platforming. The break-away platforms, which disappear shortly after Wario steps on them, limit the time the player has to move Wario to the subsequent platform. Each of the three sets of break-away platforms is more challenging than the last. The platforms decrease in size and move further apart. More jumps to shorter platforms equals greater risk. There's no formulaic pattern to the variation.

Eight of the chandeliers are loose and fall when Wario's nearby, leaving a blue flame on the ground. The loose chandeliers rock back and forth, so the player can determine which will and won't fall before Wario approaches them. This way, if a chandelier falls on Wario, it's the player's fault for not foreseeing the drop. When a chandelier lands on Wario or Wario touches a blue flame, he transforms into Flaming Wario. Given the layout of the first two rooms, this is quite a severe punishment. Not just because Flaming Wario's running speed further shortens the reaction time between jumps, but because the three touch rule sees Wario cross Room 1 three times before he can revert out of the transformation. It's much more time effective to just let Wario fall into Room 1.5. The chandeliers and break-away platforms lead Wario down into Room 1.5, which plants the seed for the canal's use as a shortcut post-fold.

ROOM 1.5



Falling down any of the pits in the upper rooms drops Wario into this underground channel. The room's length doesn't correspond to the length of the level, but never mind. The first platform is part of an arrangement in Room 3 where Wario enters as Bouncy Wario and spring jumps off the floor, up to the subsequent area of Room 3. This is one of the few examples of an arrangement spread across multiple rooms. The jewel piece chest, which enters screen view at this time, persuades the player to cut short Room 3's arrangement and grab the jewel piece then and there. If the player rejects the chest the first time round, post-fold, Wario can JUMP out of the water and onto the platform to claim the jewel piece. Pre-fold, if the player has Wario continually JUMP out of the water, with a bit of effort, they can slowly push him towards the second platform and take the pipe up to Room 5, bypassing Rooms 2 to 4.

ROOM 2

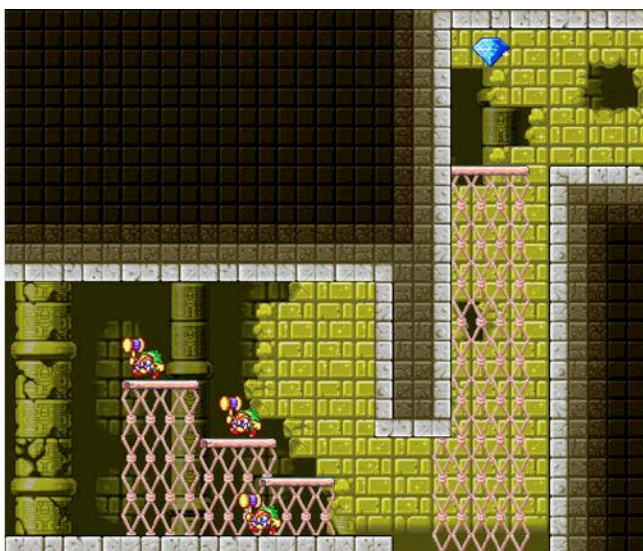


Yukiotokos, swimming, and Bubble Wario are tested. Room 2 continues the push to get Wario down into Room 1.5. As soon as Wario enters the room, he's in the Yukiotoko's range. An ice breath follows shortly after, so the player

must be on guard or risk being sent to Room 1.5 via Room 1. The position of the Yukioto combined with the length and height of the first channel prevent Wario from passing from Room 2 to Room 1 post-fold. The player is instead forced through Room 1.5. Pre-fold, the ice breaths can be exploited to glide past the Spiky Balls and into the water.

The three chunks of terrain make the arrangement of currents appear more sophisticated than it really is. The currents all return Wario to the pool's entrance, so the trick is to ignore them and take the second bubble up to the exit, before backtracking to nab the jewel piece. This arrangement is about simplifying complication.

ROOM 3



Bouncy Wario and room suspension are tested. The Menhammers are presented as though they have a height advantage over Wario, however, the one on the top platform is out of range, while the one on the middle platform only responds to Wario's jumps. Of the three enemies, it's most likely that the Menhammer on the floor will hit Wario. Rather than threaten to attack Wario, the top two Menhammers magnify the presence of the platforms held up by wooden bars. When the player then sees the wooden bars on the right, they know that they support a platform out of view. The realisation prompts the player to spring jump up as Bouncy Wario. The low ceiling before the drop prevents Bouncy Wario from spring jumping off the floor, up to the out-of-view platform, leaving the player to explore Room 1.5. Since the

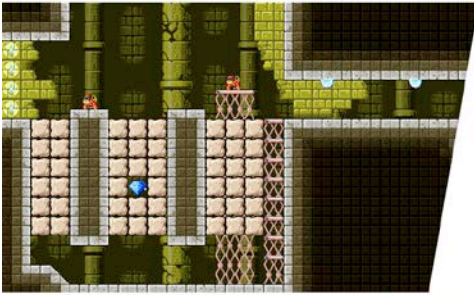
Menhammers will most likely attack Wario on the right, by the time Bouncy Wario reaches Room 1.5, the player will only have a few seconds to spot the jewel piece chest and choose between the chest or the jump.

ROOM 4



Swimming and Zombie Wario are tested. Men'onos are threats. Diamonds are bait. The two lead Wario into the Skeleton Birds' traps. The arrangement has the player monitor and act on the behaviours of the two enemies. Alternatively, the player can simplify the arrangement by isolating the Men'onos and defeating them separately so that they only need to deal with one enemy at a time. If Wario touches one of the Skeleton Bird's projectiles, he's forced into the water, as the unit-high ledges cause Zombie Wario to fall past the through platforms. For failing one exercise, the player's given another. With the exit of the underwater section on the right, post-fold, the punishment increases the closer Wario is to the left-hand entranceway.

ROOM 5



It's a transformation bonanza as Fat, Snowman, and Vampire Bat Wario all feature. The first arrangement is an optional reward-for-time exchange. The platform supported by wooden bars indicates that there's something below the blocks. The player's prompted to investigate. Since the centre set of blocks receives the most coverage of apples, it's likely that Wario will transform on top of the middle column. The arrangement sets the player up to snag the diamond on their first go. As with Room 4, the unit-high ledges force a transformed Wario into the lower area.

If the player mistakenly takes the left or right column, the diamond will enter view when Wario falls through the blocks (and when he jumps from the ground floor). The game imparts this knowledge so that the player doesn't make the same mistake twice. The slope reverts Snowman Wario back to normal, saving the player from a hard reset if they get stuck.

The bounding box holds the camera's view throughout the subsequent corridor, clearly displaying the slopes. As Wario passes through, the falling clumps of snow make themselves apparent. The wall at the end, with the diamond on the other side, can't be broken with the attack mechanics. Only Snowman Wario can clear the wall. The arrangement must first set the context, through the corridor of slopes and falling snow, so as to establish an artificial premise to work around the lack of form fits function. Why not just use a snow block?

The wall of lamps at the end of the corridor prevent Vampire Bat Wario from backtracking. As for the arrangement, the lamps pave out an extended sine wave path to squeeze the most traversal out of the confined area.

ROOM 6



Room 6 is a sequence puzzle similar to the ones in Toy Block Tower, minus the fail state. By limiting access through blocks and the switch, the puzzle is divided into several mini-arrangements. These mini-arrangements are interdependent, so solving one grants access and gives context to the next. Flicking the switch allows Wario to ROLL down the slope (and brings the slope and initial regular block into view). ROLLING releases the prof (and reveals the area where Wario must later CHARGE THROW him to). SMASH ATTACKING the regular block next to the blue block drops Wario into the water (and shows the player where they'll end up if they fail the ROLL through to the Keyzer). ROLL JUMPING is perfect for the final challenge because of the tight reaction times needed to make the jumps and tension that emerges from it. Room 6 is the only time Dr. Arewo Stein is present outside of the puzzle rooms as a projectile.

THE FOLD

After Wario nabs the Keyzer, the player can plough through the breakable terrain, snag the diamond, and follow the currents back. Wario must pass the breakable terrain at least three times pre-fold, so the player's given plenty of opportunities to spot it. Room 5's visually-identical snow block turns out to be a bit of a red herring here. As I've pointed out for each individual room, the upper route is more challenging than the underground path. The potential soft punishment increases exponentially until Room 2 where it's impossible to pass the Yukiotoke.

PURPLE PIPE PUZZLE ROOMS

All sixteen levels in the four main passages have two hidden puzzle rooms each. I call these rooms purple pipe puzzle rooms as the pipes leading into the rooms are purple and the arrangements test the player's knowledge of the game system, making them puzzles. Each room offers either a diamond, crystals, spoils, or a heart medallion as a reward.

Quite often, Dr. Arewo Stein is the key, while obstructions like terrain or blocks are the locks. Stein acts as an irremovable projectile. If the prof's absent, then he's either not needed or a substitute projectile relevant to the particulars of the arrangement, like a rock or glass ball, replaces him.

For every arrangement, there's two steps the player goes through: problem solving and execution. When problem solving, the player takes in the arrangement, considers all elements, and deduces a solution. When executing, the player acts out the solution. Problem solving stresses knowledge skills (memorising the layout, recalling information, formulating a solution, etc.), while execution stresses dexterity, reflex, and timing skills (navigating platforms, avoiding enemies, etc.). I occasionally refer to dexterity, reflex, and timing together as execution skills.

The difference between the puzzle room and level arrangements is in the way their presentation emphasises and downplays the aforementioned steps. The solutions to the puzzle room arrangements aren't immediately apparent, so the player must spend some time problem solving before they can send Wario in to carry out the task. Once the player knows the solution, the execution usually isn't too much trouble. So knowledge skills are more important than dexterity, reflex, and timing skills in the puzzle rooms.

The level arrangements generally have fairly straightforward solutions, so the player can dive in without thinking too much. The execution, though, is usually quite challenging as the player has multiple platforms, obstacles, and enemies to contend with. So dexterity, reflex, and timing skills are more important than knowledge skills in the level arrangements.

Of course, all level arrangements require knowledge skills (memorising the behaviour of game elements, tracking multiple enemies at once, etc.), and all puzzle room arrangements require execution skills (performing the mechanics with precision, etc.). The respective skill sets are just emphasised

or downplayed to provide a variety of different challenges. Generally speaking, one can think of the puzzle room arrangements as knowledge challenges and the level arrangements as navigational challenges.

Because *Wario Land 4* is an action platformer, the mechanics, game elements, and level arrangements favour execution skills. The puzzle rooms act as an optional counterbalance with restricted, knowledge-focused arrangements. That's not to say that the level arrangements don't include some puzzles, they do—Toy Block Tower is an example of a level based entirely around puzzles—however, on the whole, puzzles aren't a critical part of their design.

The level arrangements are obliged to conform to a level's structure (restricted-to-freer practice, folded level design) and game ideas, whereas the puzzle room arrangements are self-contained. These aspects are reflected in their design. The level arrangements have a variety of functions (such as to teach, create tension, or set the context) which are determined by their place in the grand scheme of a level. Most of them are also variations of the preceding arrangement, which together form a larger, cohesive meaning. Because the puzzle rooms are independent, their arrangements aren't forced to fit into any collective structure, but without this structure, they can't contribute to the larger game ideas. The puzzle rooms therefore focus on smaller, isolated concepts.

Several of the puzzle room arrangements are rather ambitious, containing multiple mini-arrangements which themselves become increasingly more sophisticated. This brings the puzzle room arrangements closer to the level arrangements' side of the spectrum.

The isolated, knowledge-centric form of the puzzle rooms is ideal for teaching the player the nuances of the game system that might otherwise get lost in the shuffle.

Like the level arrangements in Toy Block Tower, the puzzle room arrangements have fail states. For example, clearing an enemy needed to transform Wario. In these situations, the player can manually reset the arrangement by exiting and re-entering the room. With the exception of blocks, all core game elements respawn in their original positions.

Aside from one exception in Big Board, all puzzle rooms are present pre-fold, so the player has the time to think through the puzzles without stressing over the timer. Limiting the puzzle rooms to the post-fold would only encourage players to brute force a solution instead of thoughtfully engaging with the arrangement.

Keys, locks, and other important elements are often placed in view as Wario enters the room to give the player enough information to quickly send them

A number of the arrangements minimise knowledge skills by making their solutions obvious, leaving the player to go through the motions. Fiery Cavern #2 is such an example. This is my biggest issue with the puzzle room arrangements: too many of them solve themselves. Knowledge skills are, however, needed to piece the individual parts of these arrangements together into a cohesive narrative.

PALM TREE PARADISE #1



This single-screen puzzle serves two purposes: introduce the puzzle rooms, as part of Palm Tree Paradise's extended tutorial, and allow the player to realise that the prof is a projectile.

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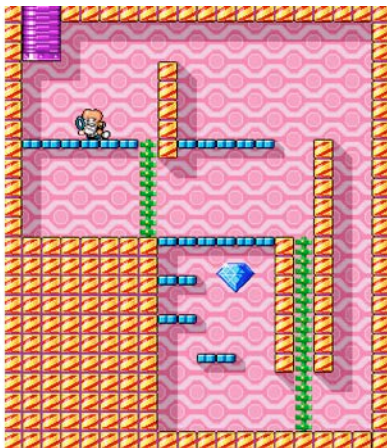
Goal: CHARGE THROW the prof through the upper unit block channel and catch him before he falls into the water. CHARGE THROW him through the lower unit block channel and CROUCH fall in from one of the blue platforms.

The diamond, ladder, and unit blocks are on-screen as Wario enters, so the player has a target and a means forwards straight away. When Wario lands on the first blue platform, another, above the ladder, comes into view, affirming the viability of the upper route.

Once at the top, the player needs to make the connection between the prof and the row of unit blocks near the diamond (the first part of the puzzle). The platform near the pipe is out of screen view when Wario's at the top. This way, after Wario CHARGE THROWS the prof through the upper row of unit blocks, the player must recall that the platform is a bit to the right and move Wario in this direction (the second part of the puzzle). Otherwise he'll land in the water and possibly miss out on catching the prof. Because some players will naturally respond by pressing and holding the right arm of the d-pad as Wario falls, to bring him closer to the prof, the arrangement may not necessarily amount to a short-term memory test.

When Wario catches the prof, the projectile aligns with the unit blocks, so the final move requires little thought. By process of completing the arrangement, the player learns that projectiles can't collide with ladders.

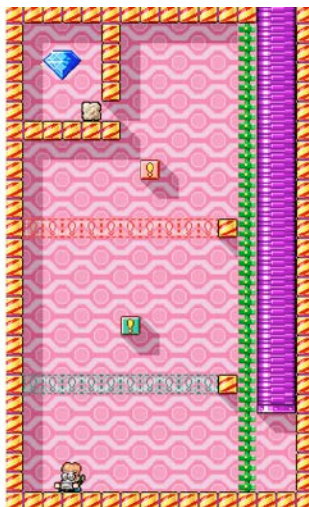
WILDFLOWER FIELDS #1



Goal: CHARGE THROW (or JUMP and THROW) the prof over the walls so that he can be STOMP JUMPED on to reach the diamond.

The prof sits between the pipe and ladder to elicit interaction. Because the player knows that they usually need the prof to reach the reward and can see that he's confined to this initial area, players that throw the prof over the wall do so on the assumption that it'll lead to the reward. After Wario descends the ladder, this assumption is confirmed as correct. The platform the prof lands on is long enough that he probably won't bounce through the gap, leaving the player to bring him down to the central area or JUMP, grab, and THROW him in the one go. The prof lands to the left of the ladder to make the final interaction more seamless. The looped design speeds up backtracking.

WILDFLOWER FIELDS #2



Goal: CHARGE THROW the prof into the switch block to create a floor beneath him, enabling the subsequent throw. At the top, CHARGE THROW the prof through the unit block and CROUCH JUMP to enter.

The prof prompts the player over to the left, revealing the length of the room and thereby leaving the player to notice the green switch block above Wario. One action leads to the next as flicking the switch creates the floor needed for the subsequent throw. The pink switch is further away from the green switch block floor than the green switch is to the ground, so the player needs to

minimise the height difference by throwing from on top of the green switch, otherwise the prof won't reach the pink switch.

The prof lands to the right after hitting the switch block. By the time Wario reaches the pink block floor, the prof has returned to his standing state. This creates a small dilemma as, with the prof between the ladder and switch block, Wario doesn't have the space to paralyse him without him either bouncing to the left of the switch or falling past the ladder. The low ceiling on the left makes it difficult to then JUMP onto the switch block without dropping the projectile. Allowing the prof to fall past the ladder forces the player to restart from the green block floor. The arrangement puts the player in a situation that's more precarious than it otherwise might seem.

MYSTIC LAKE #1



Goal: CHARGE THROW the prof to the left and then THROW him into the pool of water so he hits the block and breaks it.

As Wario enters, he lands on the prof and knocks him into the wall, paralyzing the game element. This decreases the likelihood of the player accidentally knocking the prof into the water. The block is in view from the entrance, but the diamond is only visible after entering the water. By way of discovering the out-of-view, left-hand area, the player sees the diamond and is motivated onwards.

Figuring out that Wario must THROW the prof at the block isn't the puzzle: it's the only interaction possible between the two game elements. Figuring out where to THROW from and how to angle the THROW is the puzzle.

Once the prof's in the water, the player must manually reset the arrangement to retry. This creates a process of THROW, monitor the trajectory, reset the arrangement, recall and reevaluate the previous THROW, decide on how to make the next THROW, and THROW again. The period of separation from the arrangement produces short-term memory practice. The nuance of the THROW mechanic (the direction and combination with JUMP) and ability to

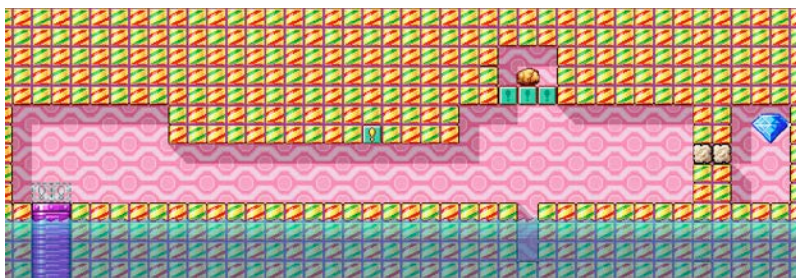
The player must also wrap their head around the logic of a slow-moving rock breaking a solid block.

This puzzle room is a combination of Palmtree Paradise #2, Wildflower Fields #1, and Mystic Lake #1. When Wario enters, switch blocks and solid blocks are on-screen to prompt the player's impulse to flick the switch. Doing so brings the left-hand side into view, so the player can see how the switch controls access to each area. The switch blocks lining the base of the water tank are unique to the room, so most players will probably make a mental bookmark of it.

The prof sits at the rightmost point of the platform so that he bounces off the wall and back onto the platform if Wario bumps him. If the prof knocks Wario into the gap, Wario remains in his bumped state until he lands, which is rather amusing to watch. Besides getting the professor through the unit gap, which is inconvenient at best, the player has nothing else to do with the him. By eliminating the alternatives, it's assumed that the player should THROW the prof over the wall and into the water. If the player makes the connection between the prof and switch blocks, it'll only reinforce their actions. Because the water tank is so tall and the prof falls so slowly, the player has just enough time to reach the ladder before the lower platform is disabled and the upper platform is activated.

Knowledge skills are needed to tie together the relationship between the professor, water tank, switch blocks, outline blocks, and solid block platforms. Without this understanding, the player can't complete the arrangement, which is why the context setting when Wario first enters the room is critical to the rest of the arrangement. (This is true of all arrangements, but particularly so of the puzzle rooms, which tend to be more complicated than the level arrangements).

MONSOON JUNGLE #1



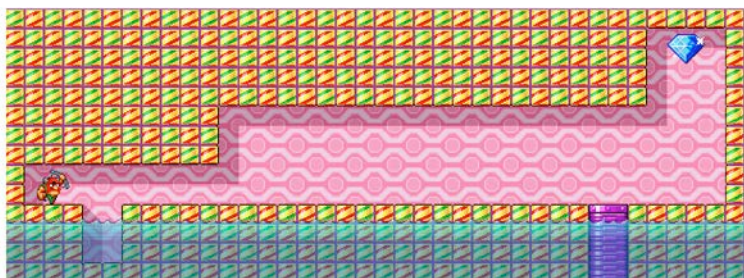
Goal: DASH ATTACK down the corridor, DASH ATTACK JUMP to hit the switch block, and keep going to knock the falling rock away from the pool of water. CHARGE THROW the rock through the unit blocks.

The distance between the rock and the switch block is the crux of the puzzle. The player needs to find a way to reach the block before it lands in the water. The low ceiling catches the high arc of Wario's JUMP, bringing him to the ground before he can cover much horizontal distance. The ATTACK JUMP'S lapse to the neutral state renders it and whichever mechanic the player follows it up with ineffective. The DASH ATTACK JUMP covers the weaknesses of the other two approaches with its low height, long trajectory, and continuous animation. As the player experiments, they'll pick up on these details.

The corridor is longer than necessary for two reasons. The first is to add horizontal white space, which encourages the player to not just DASH ATTACK, but DASH ATTACK with charge. Without charge, Wario can't DASH ATTACK JUMP. With invisible charge, Wario can momentum jump, which is enough to reach the falling rock, so long as the player maintains the DASH ATTACK on landing. The visible charge will then kick in just after Wario knocks the rock. The extended corridor also sets the context by encouraging the player to DASH ATTACK after entering the room.

The second is so that Wario can get far enough from the rock for it to respawn. Most players will likely overlook or forget about the block outlines above the pipe. Later, after they've attempted the main arrangement (activating the solid blocks), they'll find that they need to go back and flick the switch to clear the solid blocks and exit the room. On returning to the switch block, the player can see the rock fall into the water, denoting that it respawned without the solid blocks to hold it up. This informs the player that they don't need to manually reset the arrangement to respawn the rock.

MONSOON JUNGLE #2



Goal: Follow the Bow Balloon's arrow down the corridor before transforming and nabbing the diamond.

When Wario enters, the gap in the ceiling, the break in the pattern, lures the player over to the diamond. The low ceiling prevents Puffy Wario from reaching the diamond when not at the end of the corridor. The lower ceiling and pool of water confine the key-generating Bow Balloon to its alcove. The arrow travels as fast as Wario's WALKING speed, so it's easy to keep it in sight. The arrangement draws attention to the way projectiles stay in play as long as they remain in screen view.

RUBY PASSAGE

THE CURIOUS FACTORY #1



Goal: Take the prof upstairs, CHARGE THROW him into the switch block, and ROLL down the slope.

The player is lured over by the prof. The water behind him only becomes visible as Wario descends the slope, making it easy for the player to ROLL or keep walking and knock the old man into the drink. It's best to use the platform to approach him from behind. Doing so brings the left-hand ledge into view, giving the player the direction they need to finish the arrangement.

THE CURIOUS FACTORY #2



Goal: This puzzle room has four steps, as outlined below.

1. Avoid the crusher and CHARGE THROW the rock into the upper gap.
2. Get squashed and float down into the middle gap as Flat Wario.
3. Revert back, nab the rock, and CHARGE THROW it through the lower gap to clear the unit block.
4. CROUCH JUMP through the lower gap, return to the initial ledge, transform, float down into the middle gap, and then into the gap next to the diamond.

If the player fails steps 2 or 4, they can try again, but steps 1 and 3, where failing means losing the rock to a pool of water, require them to manually reset the arrangement. The room is large enough that Wario can move to the opposite end to respawn the rock. Although depending on his position, it's sometimes easier to leave and re-enter.

Step 1 is a test of execution skills. The rock waits in Wario's path. By WALKING forwards, he PICKS it UP. Thanks to the crusher's quakes, which knock the rock out of Wario's hand and cause it to bounce around haphazardly, the projectile is prone to falling off the ledge and into the water. To keep it in play, the player needs to act quickly between the quakes (dexterity) and JUMP, with the rock in hand, when the crusher slams the ground (reflex). The crusher shakes the floor at fixed intervals, making it easy to predict (timing).

Step 2 is a test of knowledge and adaption skills. Because the player now needs Wario to transform into Flat Wario, the crusher changes from an obstruction to an aid. Walking Flat Wario off the ledge sends him into the middle gap with one swing. Jumping sends him into the water. Jumping a

few units to the left sends him into the lower gap. The arrangement offers the player the opportunity to experiment, fail, reassess, and complete (test, teach, test). As Flat Wario glides into the right-hand area, the rock appears at the top of the screen, sitting safely in a small pit, and sets the context for step 3.

Step 3 builds off step 1. The player must not only transport the rock further, vertically, and over water, but they must do so without the visual timer of the crusher. Instead, they can listen out for the whistle sound right before the crusher hits the floor (reflex), create a mental metronome based on the time intervals (timing and knowledge), or do a mixture of both, with the former assisting the latter. The area to CHARGE THROW from is next to a pool of water, so the closer Wario gets to the goal, the greater risk there is of losing the rock, and the more the player must utilise the aforementioned techniques. As with the crushers, the role of the water changes from aid to obstruction.

Step 4 is identical to step 2, but after landing in the middle gap, Flat Wario needs to float across the pond to the crystal.

THE TOXIC LANDFILL #1



Goal: CHARGE THROW the rocks at the switch blocks to activate the platforms. Don't forget to take two rocks up to the first pink platform.

The rocks are put in Wario's path so as to equip him with a projectile before he takes to the platforms. The Spiky Balls, blocks at the end of each platform, and gaps between the platforms and switch blocks prevent Wario from ATTACK JUMPING the switch blocks and landing back on the platforms. The room is tall enough that the rocks respawn when Wario's a few platforms up.

Before Wario can ascend the lower two platforms, the player must first CHARGE THROW the rocks at the switch blocks to activate them. This requisite establishes a red herring, that each switch block corresponds to the subsequent platform. As us attentive players know though, the switch blocks are colour-coded. Because activating the bottom two platforms deactivates the upper two, the player can only complete the puzzle by overcoming the red herring through knowledge (observation) and adaption skills.

THE TOXIC LANDFILL #2



Goal: Transform into Fat Wario and walk into the Harimenzetto.

Wario enters with the Harimenzetto in view. With no easy means to deal with them, the player's told to cross the unit-block bridge. The Ringosuki offers an entry point to interaction. Unit blocks are used instead of a through platform so that Fat Wario can reach the floor without having to navigate around the ledge and wear out the transformation's timer. Because Fat Wario must fall to the ground to reach the Harimenzetto, he flips them over, revealing another way to expose their weak points. This room is more implicit tutorial than puzzle.

40 BELOW FRIDGE #1



Goal: Flick both switch blocks. The player has two options: THROW two glass balls which land on either switch individually or one glass ball which lands on both switches.

Shortly after Wario enters, a glass ball drops to the floor and smashes: the properties of the projectile are immediately introduced. The diamond, solid blocks, and switch blocks are all built around the main area, so the player only needs to walk right to familiarise themselves with the arrangement. Everything else plays out like Mystic Lake #1, with the player THROWING, analysing the trajectory, and adapting the information to the subsequent THROW. Except this time, since the green bird spawns an infinite supply of glass balls, the player doesn't need to manually reset the arrangement every time they fail, meaning less short-term memory practice. This is substituted with an extra variable governing the THROW: the height of the jump, something which is only optional in Mystic Lake #1. So although the time to retain the information is shorter (the time it takes to claim a glass ball), there's more to remember (relative position, THROW direction, and jump height).

40 BELOW FRIDGE #2



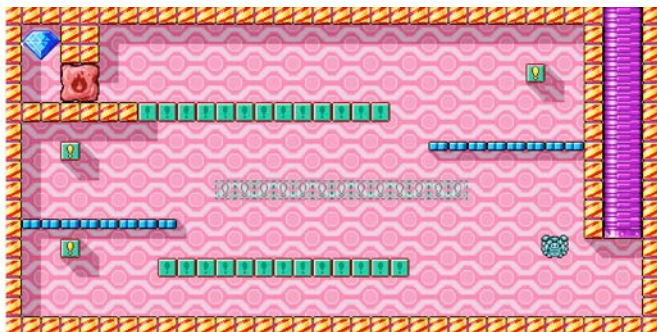
Goal: Move the Yukiotoke to the middle platform and transform into Frozen Wario so as to glide past the spikes, to the diamond.

The diamond and left-most Spiky Ball are visible as Wario enters, while the Yukiotoke covers the ground floor. Having already completed most of 40 Below Fridge, the player is familiar with the Yukiotoke, its ice breath, and Frozen Wario. The arrangement reminds them of Frozen Wario's three key properties, which they must acknowledge to reach the diamond: his invulnerability (the Spiky Balls), continual horizontal movement (the gap), and the height of his fall (the middle platform).

After Frozen Wario glides off the lowest of the three main platforms, back to the ladder, he's far enough from the Yukiotoke for it to revert to its original

position. This ends up a bit jarring, as Wario's sent off the platform by a Yukiotoke, only to have the same Yukiotoke shooting ice breaths at him from the ground floor 5 seconds later. After gliding off the top platform, into the wall, Wario's brief invincibility allows him to fall through the Spiky Ball without taking damage.

PINBALL ZONE #1



Goal: As Flaming Wario, flick the switch blocks to activate the platforms and keep the ascent going. Wario must touch the left- and right-hand walls before he hits the fire block, the third touch, and clears it on impact.

Since it's likely that Wario will enter the main area as Flaming Wario, given the pig head statue dropping flames in his path, the player's cast into the reflex-based exercise from the get-go. The arrangement hinges on the three touch rule, so the player must be wary of the number of wall touches and direction Wario faces.

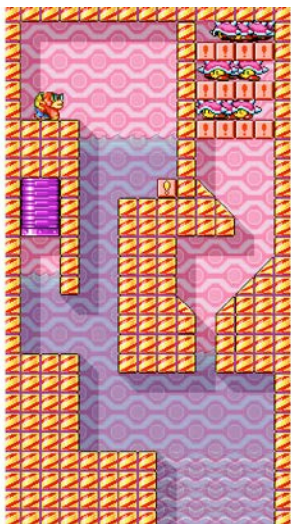
The terrain to the left of the pipe intercepts Wario's jumps, which makes it slightly more difficulty to avoid the fire. The switch block under the through platform is a safety measure in case the player deactivates the first solid block platform and falls to the ground. Because Flaming Wario moves faster than regular Wario, the platforms are longer to create sufficient downtime between the jolts of reflex.

PINBALL ZONE #2



Goal: CHARGE THROW the prof through to the left hand-side, then fall and THROW him into the blocks.

Entering the room, the player can see the unit block concealing the left-hand path. The row of crystals, also in view, lures them down to the prof, the means to break the block. The terrain stalagmite prevents the prof from falling down the chasm. The initial CHARGE THROW establishes a context for the player to use the mechanic to solve the left-hand arrangement, not dissimilar from the red herring in The Toxic Landfill #1. The two blocks side by side reinforce this idea by implying that the player can break them both in a single throw. Knowledge and adaption skills are needed to overcome the mental barrier and realise the solution. The first part of the arrangement strengthens the second.



Goal: JUMP out of the water to grab the Ringo's apple, transform into Fat Wario, and land on the switch block to release the Harimen. Quickly swim around to the lower channel to collect the spoils.

For some reason, Pinball Zone has an extra puzzle room. One can only assume that the developers made one too many rooms.

The switch block at the top-right corner of the screen as Wario enters acts as visual bait to lure the player to the right. The barrier draws Wario downwards to reveal the junction, but isn't low enough to turn the player's attention away from the switch block and onto the lower route. Not knowing what lies at the bottom of the room is an added impetus for the player to madly retreat to the lower route after unleashing the Harimen. The top half of the arrangement strengthens the bottom half.



The red box is the Ringosuki's attack range. Wario must JUMP into this box to elicit an apple.



Wario must then touch the apple at the end of its trajectory, also the edge of the Ringosuki's attack range. As we can see by the red box, Fat Wario's hit box, he's far enough to the right to fall on and subsequently activate the switch.

This arrangement wouldn't be possible if the centre of the apple didn't meet the edge of the enemy's attack range. Thus, providing the half-unit bit of leeway needed to close the gap.

At the top, there are two layers of problem solving: how to use the Ringosuki to flick the switch and, once the player's figured that out, how to be in the Ringosuki's range while still being close enough to the switch block that Wario can land on it after touching the apple. To minimise the distance between the Ringosuki and switch block, the player needs to put Wario in the Ringosuki's range and have him JUMP out of the water once the apple's been thrown, moving to the right so as to catch the fruit and nip the switch block on the fall. The arrangement focuses on a variety of aspects pertinent to the transformation, such as the Ringosuki's attack range, the trajectory of the apples, and the relationship Fat Wario has with water.

As soon as the switch has been flicked, Wario must quickly swim to the bottom to claim the spoils. The slopes inside the funnel slow the Harimens' descent, drawing out the dramatic tension and giving the player enough time to reach the rewards. The two halves of the arrangement go well together as one is focused on precision and the other speed, meaning that adaption skills are needed to react to the sudden change.

TOPAZ PASSAGE

TOY BLOCK TOWER #1



Goal: Form a running path to the thick block by hitting the switch block twice in quick succession. DASH ATTACK across the newly-formed path.

When Wario enters the room, the row of crystals fill the bottom of the screen, meeting with the thick block. The implication being that by DASH ATTACKING through the crystals, Wario can break the block. Once Wario drops down to the main area, the player can see that there's no path to run on. Assembling the bridge is easy enough given the switch block is the only game element Wario can interact with. The context established by the crystals makes it easier for the player to realise, if they didn't already know, that Wario can DASH ATTACK over unit gaps. The arrangement teaches through suggestion more than anything else.

The hole is deep enough that if the blocks fall into it, Wario can't DASH ATTACK JUMP off them into the thick block. The extra unit of height the pit has over the blocks dissuades the player from trying. The state of the outline/solid blocks doesn't change when Wario resets the arrangement, so if the player doesn't return the outlines to solid blocks after hitting the switch block too slowly, on re-entering the room, the blocks will fall into the pit. With a focus on execution and no in-room means of resetting the arrangement, the player may have to leave and re-enter the room numerous times.

TOY BLOCK TOWER #2



Goal: ATTACK the red circle to knock it onto the platform below and then use it to HEIGHTENED SMASH ATTACK the left-hand thick block. DASH ATTACK the remaining thick block. Knock the red circle off the right-hand ledge and then into the pit so that Wario can JUMP off it to reach the diamond.

The height gap between the diamond and floor is the lock. The red circle is the key. After Wario enters, the player can see that they'll need something to JUMP off of to reach the diamond. Going left is awkward because of the low ceiling and thick block, so the player's persuaded to head upwards to the red circle. Problem meet solution. Solution meet new problem: getting the circle downstairs.

The unit-high wall prevents Wario from pushing the circle into the corner, forcing a manual reset. It's also akin to a starting block which, with the slope just ahead, prompts the player to push the circle. The circle then rolls onto the blue platform where it doubles as a raised ledge to HEIGHTENED SMASH ATTACK the thick block. Doing so clears enough space for Wario to DASH ATTACK into the right-hand thick block. Each action facilitates the next, creating flow.

THE BIG BOARD #1



Goal: CHARGE THROW glass balls through the rows of unit blocks to release the Toy Cars which can then be STOMP JUMPED off to reach the heart medallion chest.

From the middle platform, the player can't see the heart medallion chest, let alone the platform and Spiky Balls below. Without knowing what's below Wario, there's a 50-percent chance that the player will send him off the left-hand side of the platform, into the Spiky Balls. Obviously not great design. The unit blocks along the ground are also a bit of a mystery. Players are drawn to breaking blocks, which, in this case, not only detracts from the arrangement, but increases the likelihood that Wario will touch the Spiky Balls.



When Wario holds a glass ball on either of the two upper platforms, it aligns with the unit blocks, eliciting a horizontal CHARGE THROW. The Toy Cars act as stepping stones, giving Wario the extra height needed to surmount the wall.

The puzzle room draws the player's attention to three important details: Spiky Balls sit on a different layer to other enemies, STOMP JUMP is higher than JUMP, and glass balls can clear unit blocks, despite breaking when hitting terrain.

THE BIG BOARD #2



Goal: SMASH ATTACK the ground to send the prof bouncing over and then throw him so that he hits the switch.

This second puzzle room is situated post-fold, so the player must complete the arrangement with a timer looming over them. Since the puzzle rooms test knowledge skills and time constraints encourage the player to act on impulse, the timer only leads to trial and error. It's perhaps for this reason that the puzzle is so simple.

The diamond and outline platform are on-screen as Wario enters, so the player knows right away that they need to flick the switch. The blocks model the throwing trajectory. The Big Board #1 reveals that enemies sit on a different layer to Spiky Balls. The Big Board #2 shows that the prof also sits on a different layer. It's more apparent in this arrangement as the player needs to bring the prof out from and then back behind the wall of Spiky Balls.

DOODLE WOODS #1



Goal: ROLL down the initial slope and ROLL JUMP into the switches before Wario reaches the solid block platforms to deactivate them and descend. Repeat to re-activate the platforms on the way back up.

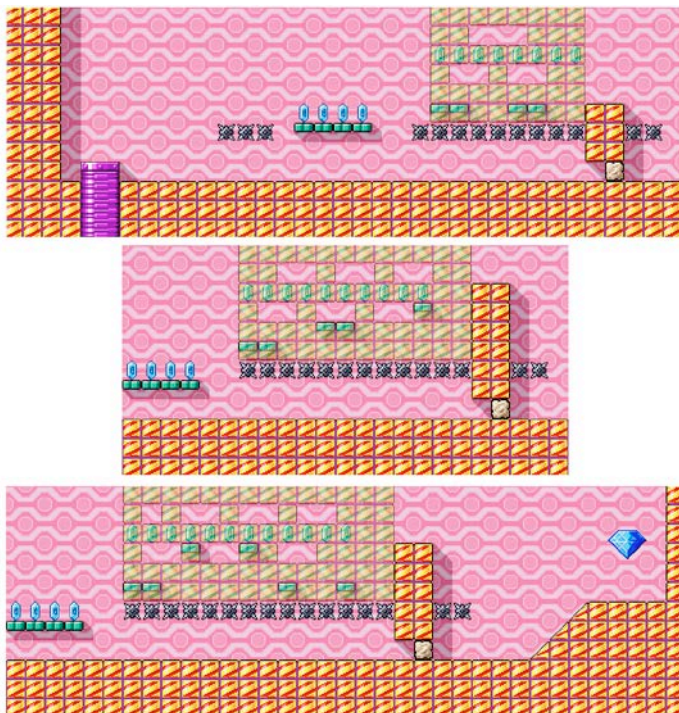
The unit-wide channel to the left of the pipe prevents players from undermining the arrangement. The mini-slope on the right prompts them to ROLL. Wario can only enter the main area in his rolling state. The switch blocks activate and deactivate the bridges, allowing Wario to ascend and descend the floors. Because the bridges alternate between solid blocks and outlines, to progress, the player must ROLL JUMP to flick the switch blocks every time they encounter one.

Exiting the room from one side sends Wario around to the other, so if the player misses a switch, they'll be sent back around for another try. Because of this looping design, the player can't complete or even forfeit the arrangement until they understand the relationship between the individual elements and have the reflex skills to flick the switches.

Since the bridges are right next to the switches, the player's given immediate feedback on their actions as well as enough time to prepare for the subsequent switch. The slopes before each solid block bridge imply that Wario can descend into the area below. They also allow the player to ROLL again if Wario somehow breaks out of the rolling state. The catches underneath stop Wario from ROLLING straight to the bottom.

Because ROLLING is faster than WALKING and the fade-in as Wario re-enters the room shortens the time between the player seeing the switch blocks and ROLL JUMPING into them, reflex skills are a core part of the arrangement. That's not to exclude knowledge skills, though. Understanding how the bridges and looping exits come together helps the player navigate the environment more decisively. When the player misses one of the switches, they need to flex their short-term memory to remind themselves not to ROLL JUMP when Wario passes the previous switch block, as doing so would send them up a floor and undo their progress. After taking the diamond, the player needs to adapt their knowledge to the new position of the goal.

DOODLE WOODS #2



Goal: Remember the layout of each set of platforms and cross them without falling.



Entry



After the first unit of the green platform



After the second unit of the green platform (look)



When jumping off the green platform (cover)



Jumping (write)



First 2 units of subsequent arrangement's green platform (check)

Each of the three mini-arrangements starts with a green platform where Wario's horizontal movement along the platform sees the camera calibrate to different bounding boxes. Let's take the first mini-arrangement as an example. After the first unit of the green platform, the camera reveals the first of the blue platforms. After the second unit, the camera reveals them all. When Wario jumps off the green platform, a cover appears over the blue platforms. When Wario's within the first 2 units of the subsequent mini-arrangement's green platform, the cover concealing the previous mini-arrangement's blue platforms becomes transparent.

The bounding boxes create a look-cover-write-check style of play. The player *looks* at the blue platforms and tries to remember the layout. The game *covers* the platforms as soon as the player jumps (*writes*). When the player reaches the subsequent mini-arrangement (success) or returns to the original green platform after falling (failure), they can *check* the layout. Like look, cover, write, check, the puzzle room tests short-term memory skills.

If the player forgets where one of the platforms is located and makes a wrong jump, Wario will land on the Spiky Balls and the player must try again. The execution is dependent on the memorisation, but there are times when a lucky jump will save Wario's skin. The player can scale the task by jumping to every odd platform, reducing the risk of error and content that needs to be memorised. Without the holes in the coverings, directing Wario would be unnecessarily difficult. The crystals are arranged in rows so as not to inadvertently give away the layout of platforms. The mini-arrangements are long enough and the barriers tall enough that Wario can't clear the platforms in a single ATTACK JUMP.

The variation between each set of platforms keeps the player on their toes. For each mini-arrangement:

- » A new platform is added
- » The length of area is extended
- » The platforms begin level, then rise, and finally rise and fall
- » The unit gaps between each platform changes from 2, 2 to 2, 3, 2, and then 1, 2, 1, 2, 2
- » There are more holes in the covering

Following the three mini-arrangements, Wario can use the slope to beeline back to the entrance.

DOMINO ROW #1



Goal: CHARGE THROW the prof through the row of unit blocks and claim the spoils.

The arrangement demonstrates, through interaction, how land enemies perish when they touch water.

SAPPHIRE PASSAGE

CRESCENT MOON VILLAGE #1



Goal: Transform into Zombie Wario, fall through the left-hand platform, PICK UP a glass ball, avoid the Skeleton Birds, and clear the unit blocks with the projectile.

When Wario enters, all the pieces of the puzzle are on-screen: the reward (diamond), the lock (row of unit blocks), and the key (glass ball). The room consists of two interdependent arrangements. The first is the green bird locked behind the through platform. The second is the diamond locked behind the row of unit blocks. The glass-ball key and unit-block lock tie the two together. Every time the player fails the second arrangement (drops the glass ball), they need to repeat the first (transform and fall through the left-hand platform to the green bird).

In the first arrangement, the Skeleton Birds are aids, helping the player reach the green bird. In the second, they're hazards, thwarting the player as they attempt to deliver the glass ball to the unit blocks. The Skeleton Birds' role is dependent on the arrangement. The enemies conveniently hover over the room's junction, between the green bird and unit blocks. The platforms are arranged so as to draw out the time Wario's in their range. The glass balls negate manual resets, however, if the player removes both Skeleton Birds, then they still need to leave and re-enter the room.

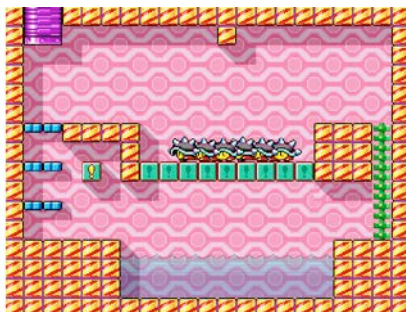
CRESCENT MOON VILLAGE #2



Goal: CHARGE THROW the prof over the wall so that he lands on the block and breaks it. Stand on the other side to lure the Totsumen into the water.

This single-screen arrangement is similar to [Room 2.5 in *Mystic Lake*](#). CHARGE THROWING the prof onto the block is the only interaction possible between the two game elements. Regardless of whether the player intentionally draws the Totsumen out, in claiming the reward, they learn how to bait the enemies.

ARABIAN NIGHT #1



Goal: Navigate around the Harimenzetto to flick the switch block, releasing them into the water.

As Wario enters, the Harimenzetto, switch block, and solid block floor are all in view. The Harimenzetto cover most of the floor, and since touching their spikes hurts Wario, the player ought to—but doesn't necessarily have to—devise a way around them. This is the puzzle. The ledge isn't high enough to HEIGHTENED SMASH ATTACK from, and the unit block of terrain attached to the ceiling prevents Wario from ATTACK JUMPING over the enemies.

There are two solutions. When the player observes the Harimenzetto's movement patterns, they'll notice that they cobble together as they move in to and out from the corners of the pit. The first method is to wait for them to huddle up on the right and ATTACK JUMP over them. The second is to SMASH ATTACK the ground while they're close together so that they turn around and bunch up into a tighter pack.

Once the player gets past the Harimenzetto and takes the ladder downstairs, the pool of water comes into view and the reward is realised. The Harimenzetto's role changes depending on Wario's position above or below them.

ARABIAN NIGHT #2



Goal: THROW the prof up onto the thick wall and SMASH ATTACK the ground so that he bounces over to the right-hand side, then CHARGE THROW him into the unit block.

The diamond and unit block are visible as Wario enters, leaving the player to find a projectile on the left. The through platforms on either side of the thick wall suggest that something could move across the top. The puzzle is how to get the prof (key) over the wall, where it can then be CHARGE THROWN into the unit block (lock). Unlike rocks, which bounce in the direction Wario faces when he SMASH ATTACKS the ground, the prof doesn't consistently bounce in any one direction. The player must therefore repeatedly SMASH ATTACK the ground until the prof eventually finds his way to the right-hand side. The arrangement makes no sense. Why not replace the prof with a rock and remind the player of its aforementioned bouncing properties?



Goal: Flick the green switch block, transform, bounce up into the purple switch block, and then the green switch block.

Entering the chamber, the arrangement is at a standstill until the player flicks the green switch block. Doing so drops the floor, activates a second floor below, and releases the Menhammer from its cage. Because Wario falls in the centre of the column, under the switch block, he's in a good position for the Menhammer to then catch the player off guard as Wario lands, transforming him into Bouncy Wario and setting the context for the solution to the puzzle. The form makes it easy for the player to bring the purple switch block into view, giving them the information they need to complete the arrangement.

The central column is long enough that the player has sufficient time to align Bouncy Wario with the purple switch block. Wario can also get far enough from the Menhammer for it to respawn, if it falls off-screen when the lower floor is removed. (The Menhammer doesn't fall back around to the top of the room like Wario, as enemies can't move between rooms).

FIERY CAVERN #2



Goal: CHARGE THROW the prof into the switch blocks.

This puzzle room is divided into several interconnected mini-arrangements where the player finds the prof, CHARGE THROWS him at a switch block or through a row of unit blocks, and then follows the projectile around to the subsequent area to repeat. Although each mini-arrangement dovetails nicely into the next, the structure dilutes knowledge skills down to following a series of obvious cues.

When Wario enters, the player can see that the platforms and switch block don't align so as for Wario to CHARGE THROW a projectile at the switch. This isn't the case for the row of unit blocks on the left, also in view, but with no projectile, the player's lead downwards to find one. In the following area, the switch sits below Wario as he goes to reclaim the prof, giving the player the information they need for the subsequent CHARGE THROW. The solid block wall that the player then activates prevents Wario from CROUCH WALKING through to the final area. Once past the lava geysers, the player must connect the dots between the switch block they saw when they first entered the room and the platforms to Wario's right.

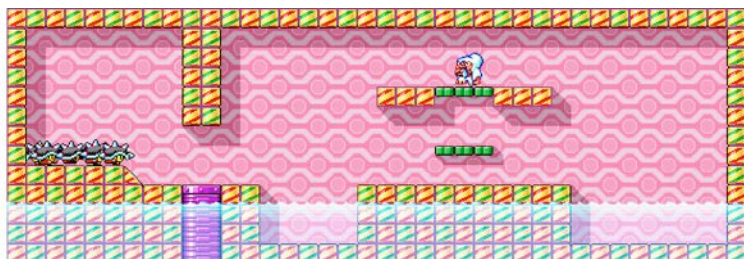
HOTEL HORROR #1



Goal: Transform, touch the transportation pads to return to the centre, and either jump or spring jump to reach the diamond. Repeat for the other transformation. Alternatively, move the enemies closer to the centre and transform.

As Wario enters, the lower diamond sits visible beneath the thick block. With no apparent means to HEIGHTENED SMASH ATTACK, the player's given a target, a Ringosuki. The left- and right-hand sides of the room are dedicated to the Ringosuki and Menhammer who command a wide range from high vantage points. Since this is the first and only time the teleportation pads are present, the player will naturally be interested in interacting with them. The puzzle hinges on the player realising that the pads can move a transformed Wario to the centre, where he can reach the diamonds. The reasonable likelihood of Wario taking an attack and then touching the pads assists the player in solving this modest puzzle. The transformations' limitations force the player to either use the transportation pads or move the enemies.

HOTEL HORROR #2



Goal: Approach the Yukiotoko from the left and glide into the Harimenzetto as Frozen Wario. Alternatively, HEIGHTENED SMASH ATTACK from the highest platform, jump over to the left-hand side, and individually SMASH ATTACK the Harimenzetto.

On entry, the slope and Harimenzetto are in view, so the player has a motive and can start looking for a means. The Yukiotoko is already in place. The player just needs to wait for it to move to the right of the through platform so that Wario can JUMP up from the left. The other platforms are obviously too low for Frozen Wario to clear the gap. The slope keeps the Harimenzetto away from the right-hand edge, discouraging the player from attempting the alternative solution. The far right pool of water is unnecessary white space.

Two vapid puzzle rooms in the one level. At least, like Hotel Horror itself, the puzzle rooms are unique, in that they offer multiple solutions.

BOSSSES



The levels may make up the meat of the game, but difficulty-wise, they're nothing but a warm-up for the boss battles. These one-on-one duels round out the passages by pitting Wario against hybrid animal creatures with multiple phases and sophisticated attack patterns. Confined to a 4-minute timer and a screen-sized room, the player must exert all areas of the skill spectrum and employ a variety of boss-specific techniques in order to overcome their foes. These encounters are some of *Wario Land 4*'s highlights.

CONSIDERATIONS

The four jewel pieces form a complete jewel that slots into the door at the end of each passage. Once the player's gathered the requisite number of jewels, one for each of the passage's levels, the door opens up to a short corridor where the player can advance to the boss or buy goods from the Item Shop to sneak in a pre-fight potshot.

At the back of each of the main boss rooms are three treasure chests. A 4-minute timer runs down at the start of each battle. As the timer moves closer to zero, the chests begin to vanish, so the sooner the player defeats the boss, the more treasures they can take with them. After each boss is completed, the remaining treasures enter the Golden Passage, leaving the player to reclaim them all in a similar fashion against the final boss, the Golden Diva. The number of treasures the player can then muster out of the Golden Diva determines the game's ending. The player is also rewarded with

a piece of jewellery from each boss. The Golden Diva takes the jewellery and uses their innate abilities against Wario in the final battle.

Subtle visual details, like crawling vines in Cractus' room and exposed gears in Cuckoo Condor's room, add a bit of context to each boss fight.

The bosses are *Wario Land 4*'s toughest challenges. All areas of the skill spectrum are accounted for, and each boss emphasises particular combinations of skills and mechanics. Generally speaking, avoiding, attacking, and moving into position require reflex, dexterity, and timing skills. Adjusting to each phase and the variation in attacks requires adaption skills, while predicting movement, drawing trajectories, and memorising attack patterns require knowledge skills.

The pause screen is a fill of black with the word "Pause" in the centre so the player can't halt gameplay and pre-plan their next move. Videos for each boss battle are included in the references in the first sentence of each section.

SPOILED ROTTEN

Timer: 1 minute

Combination: An eggplant and a spoilt child

Minions: Eggplant Warriors

In Short: ATTACK JUMP or full JUMP to leverage height and distance in a diminishing space

Spoiled Rotten is a 3-unit-tall Marumen, who later transforms into a Spearman¹. Two Eggplant Warriors, i.e. Totsumen, spawn by its side. The kitchen, Gamecubes, and television in the background suggest that the boss room is Spoiled Rotten's home. The timer only lasts a minute and the difficulty bar is set low so as to establish a precedence for hastily defeating the bosses.

The Eggplant Warriors are likely to initiate the confrontation with their running charge, which makes it easy to isolate them before tackling Spoiled Rotten. CHARGE THROWING an Eggplant Warrior at Spoiled Rotten stuns the cry baby for a short second.

Spoiled Rotten waddles from one side of the room to the other, stopping short 2 units from the edge of the screen to leave a dead spot which players can exploit. Wario can ATTACK the eggplant from both the front and behind. At 3 units high, it's too tall to SMASH ATTACK. For each attack taken, Wario bounces back and Spoiled Rotten recoils some distance to prevent the

1 Spoiled Rotten Video—<http://youtu.be/zz4fZbNccQg>

player from spam ATTACKING. After recoiling, the boss walks faster until it reaches the opposite end of the room where it turns around and returns to its normal walking speed. After one hit, Spoiled Rotten puckers its lips. After three, it starts drooling. After five, it opens its mouth. After seven, Spoiled Rotten walks slower and its face turns into a mutilated mess. In this final form, Wario can no longer ATTACK the boss from the front as its face hurts him, instead, the player must vault over the tortured tot and ATTACK it from behind. This is where the arrangement gets to its underlying point: having the player determine which jump is the highest and how far to stand from the boss so as to achieve the cleanest jump. Or, more specifically, which jump lifts Wario 3 units into the air and how far he should stand from Spoiled Rotten so as to reach the apex of the jump when directly above it, thereby clearing its hit box and not taking damage. The player needs to choose a spot to jump from, see the jump in their mind's eye, and wait for the boss to reach their respective position (knowledge and timing). The toddler's walk, a timer, prompts the player to quickly peg their spot and prep for the jump. The longer they wait, the less space there is to work with, and the more they have to readapt their strategy to the changing space, and with less time to boot. Take too long and they'll have to wait for the next available opportunity after the turn around. To beat Spoiled Rotten, the player needs to not only be decisive, but display an understanding of and proficiency with either the full JUMP or ATTACK JUMP, or both. Alternatively, they can just wait it out in the corners. Knowledge skills trumps all else.

CRACTUS

Timer: 4 minutes

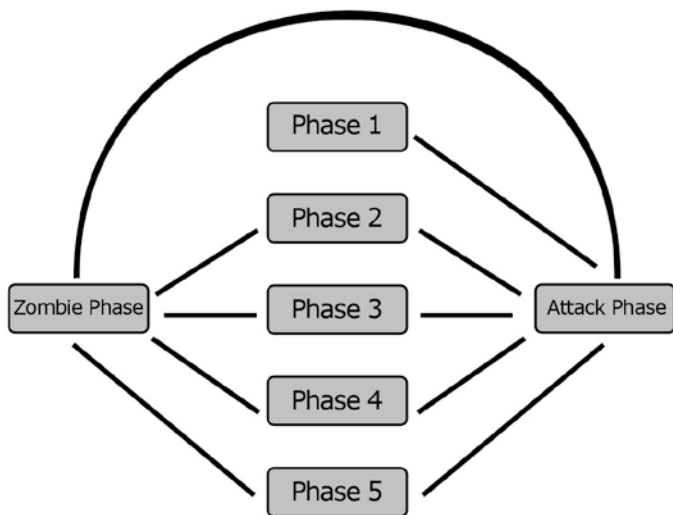
Combination: An evil plant, a cactus, and a cloud

Minions: Firefly

In Short: Tricking off ladders for height to SMASH ATTACK

Cractus, the malevolent flying cactus, is a fitting conclusion to the nature-themed Emerald Passage². He's perhaps the most challenging boss too as his homing leaf attacks are not only frequent, but difficult to avoid. Pay attention. Things are about to get really complicated.

2 Cractus Video—<http://youtu.be/dq021z9tLQo>



After the Attack Phase is complete, Cractus either jumps to the subsequent phase or returns to the current one, depending on the number of hits taken. After the Zombie Phase is complete, Cractus returns to the current phase.

PHASE 1

On entering the room, Cractus is asleep, or at least pretending to be asleep. If Wario touches his spiked leaf hands, he opens his eyes and laughs. After attacking the vase to release him, Cractus flies across the screen from right to left, setting the context for his later attacks, before entering phase 2.

Unbeknown to most players, Wario can attack Cractus during this initial fly over, even though it can be difficult to overcome his height. The later phases teach the player how to attack the boss, so this type of preemptive strike only becomes evident after repeated attempts. Once attacked, Cractus enters the attack phase, as he does every time Wario SMASH ATTACKS his head. For most players, Cractus will enter the attack phase from phase 2, where he's low enough to easily hit, however, since it's possible to attack him in phase 1, I've ordered the headings as such.

ATTACK PHASE

Cractus flashes white and rises to the ceiling, dropping goops of slobber. At peak height, the slobber stops and he glides to the left, attacking Wario with his homing leaf hands. Once Cractus reaches the left-hand wall, the attack phase ends and he either returns to the current phase or jumps to the next, depending on the number of overall hits taken. If Wario touches the leaf hands, he takes damage and the attack phase ends early.



It's difficult to get Wario out of this position.

This phase is challenging because Cractus both encroaches on Wario's space (by floating towards him) and displaces his position (with the homing leaf attacks)—the player has two fronts to defend. Once Cractus reaches the wall, Wario's cornered, with minimal room to safely dodge. By this stage, it's almost inevitable that he'll get hit. This predicament forces the player to find a way to overcome Cractus's leaf attacks as, if they don't, Wario will routinely lose a heart every attack phase, which puts the player at a major disadvantage.

The length of Cractus's arms, and thus how well he can home in on Wario, increases with each passing phase. So the further through the battle, the more threatening the attack phase becomes, and the more pressure's put on the player to figure out how to evade the leaf hands. There are two techniques the player can use:

1. Wario can get behind Cractus by falling to the right after the SMASH ATTACK leading into the attack phase or walking underneath him once the slobber drops dry up. Doing either prompts the plant fiend to float to the right so that Wario remains in front and therefore in a position to be attacked. The player can exploit this trait to buy time, continually luring Cractus backwards. The one caveat being that once Cractus reaches the right-hand wall, Wario can no longer get behind him. This gives the boss a moment to resume his leaf attacks, until he moves forward enough for the player to sneak underneath him again. After some time without hitting Wario, Cractus flies off-screen and the attack phase ends.
2. As Cractus flashes white, the player can move Wario into position and, as soon as the flashing stops, attack him again to throw the floating cactus back into his recovery animation. Keep Cractus in this attack-recover-attack loop long enough and the player can defeat him in one go, bypassing phases 2 to 5.

Although it might seem "*cheap*" to exploit Cractus's recovery animation through the second method, it's anything but. To attack Cractus, the player needs to JUMP to the vines, CLIMB on, CLIMB to the top, JUMP off, check that the hit boxes line up, and SMASH ATTACK his head.

Depending on whether the player CLIMBS back onto the vines as Wario falls from the previous attack and which vine they CLIMB onto, the process may differ slightly. To chain attacks together, the player must prepare for the subsequent SMASH ATTACK in a matter of seconds, before Cractus wakes from his recovery animation. Otherwise he'll move forward and continue his homing attacks, which can potentially end the cycle if the player doesn't retaliate fast enough. Recovering from one attack and readying and executing the next in such a short time stresses the necessary dexterity, timing, and knowledge skills; repeating this technique multiple times in succession can only require even further skill. The longer the chain, the more skill needed. So rather than an exploit for cheap players to abuse, Cractus's recovery animation allows the player to scale the difficulty.

(ZOMBIE PHASE)

When Wario touches Cractus's slobber, he transforms into Zombie Wario and Cractus retreats to the top-right corner of the room to laugh at him. A firefly then enters the room as a means for Wario to revert back to normal. Because the current phase follows the zombie phase, the player can intentionally touch Cractus's drool in the attack phase so as to return to the current phase. This allows them to choose between the risk of hard punishment (attack phase) or guaranteed soft punishment (zombie phase).

PHASE 2

Gliding along the floor, Cractus starts low to draw attention to his exposed weak point and so that the player doesn't need to CLIMB the vines to gain the height advantage. When he reaches the left-hand wall, he floats upwards until he's off-screen, before returning on the right for another sweep. Cractus doesn't attack Wario outright, allowing the player to familiarise themselves with his basic movement patterns. The player can bounce on Cractus's head, but if they don't bounce off before he rises to the ceiling, Wario will be pushed into Cractus and take damage.

If Wario's hanging from the vines just before Cractus enters, instead of floating along the floor, the plant fiend will glide along the ceiling, drooling slobber down on Wario below. The bulge of his head is off-screen, so Wario can't attack him. The rain of saliva is tough to avoid as each drop, when hitting the ground and splashing, is 1 unit apart. Although Wario can fit between them, his weightiness protrudes out from his unit-wide hit box, which can make it difficult to predetermine potential collisions. The arrangement tests the player's knowledge of Wario's hit box.



The white bars show where the slobber will fall.

Just before Cractus enters screen view, a falling sound plays to signal that it's safe to CLIMB the vines without prompting a saliva raid. Listening out for this prompt helps the player get the jump on the boss.

PHASE 3

After three hits, Cractus homes in on Wario with his leaf hands. The attacks persuade the player to take to the vines where the hands can't reach.

PHASE 4

Three more hits later and Cractus floats along the middle of the screen, where his leaf hands can reach Wario more easily. He also drools slobber as he floats, which makes avoiding from underneath risky and dangerous. It's now more difficult to avoid Cractus in the main phases than in the attack phase.

PHASE 5

After a further three hits, Cractus slows down. Four more and he enters phase 5. This final phase is identical to phase 4, except that Cractus can extend his arms further, floats slower when Wario's in front of him, and faster when Wario's behind him. Cractus's slower speed, when Wario's in his range, gives the plant fiend more time to attack. Cractus's faster speed, after Wario walks underneath him or bounces over his head, shortens the interval between the next round of attacks. Three more hits finishes the battle.

There are two issues which can lead the player to accidentally lose health. The first is the hit box of Cractus's head, which is centred on the flat bump and excludes the left and right edges. Because the hit box doesn't quite match the image of the head, it's easy for the form to deceive players and see Wario SMASH ATTACK through the side of Cractus's head, into his leaf hands. A technique I use is to first JUMP on the boss's head. If Wario bounces, I *then* SMASH ATTACK that spot. If he misses, at least I can steer his fall away from the leaf hands.

Because the flat bump is raised, more accuracy is needed when timing the JUMP so that Wario reaches the JUMP'S apex when above Cractus's forehead. If Wario's not at maximum height, it's difficult to get on top of the

hit box. This is why the bounce technique is so useful: it allows the player to move Wario closer to the centre of Cractus's head, something which can be difficult with just a regular JUMP.

The second issue is that there's a brief moment where Cractus stops flashing and his recovery animation appears to have ended when it's still in effect. If Wario JUMPS onto Cractus's head during this time, he'll pass right through.

Every time Cractus takes a hit, he enters the attack phase where he employs his super-effective homing leaf attack. Because of the risk of routinely losing a heart, the player's encouraged to find a way to evade the homing leaves. The best option is to take to the vines and SMASH ATTACK Cractus again, just after his recovery animation ends. This creates an attack-recover-attack gameplay loop which, so long as the player continually presses the advantage, Cractus can't easily break out of. In this way, the attack phase establishes an initial precedence for the player to scale the difficulty through Cractus's recovery animation.

The five main phases successively upgrade Cractus's abilities (greater height, longer arms, slower movement), which indirectly augments his homing leaf attack. By phase 4, the main phases supersede the attack phase in terms of difficulty, and the other option for avoiding Cractus's homing leaves, walking underneath him, is ineffective thanks to his drool drops. Therefore, as Wario progresses through the battle, the presence and effectiveness of the homing leaf attacks increase, pushing the player to take advantage of Cractus's recovery animations and max out their skills. The boss battle plants the seeds for scalable difficulty and then progressively urges the player to take advantage of it.

CUCKOO CONDOR

Timer: 4 minutes

Combination: A condor and a cuckoo clock

Minions: Saw blades (stationary and mobile), electric saw blades, white eggs, homing chicks

In Short: Pushing against and adapting to the slippery slope of increasing variables

As embedded in its name, Cuckoo Condor is a boss of two forms³. The first, a floating cuckoo clock with a low-hanging claw and a saw blade generator on either hand. The second, a mother condor who drops an endless supply of

3 Cuckoo Condor Video—<http://youtu.be/xoTaPFleZfU>

eggs. Once an egg hits the ground, the chick inside hatches and homes in on Wario. To create sufficient vertical wiggle room between Wario and the boss, the camera is raised 1 unit so that the bottom of the screen rests on the floor.

PHASE 1

The first three phases follow the same structure: two rotating saw blades, one on the left- and one on the right-hand wall, with the cuckoo clock floating back and forth between them, attempting to snatch Wario with its claw. When Wario's directly underneath the mechanical grip, it opens, emitting a soft click, and then lunges at him. The sound effect informs the player that the claw's primed to grab Wario, while the unclenching animation stalls the action long enough to evade. These two properties allow the player to lure the claw downwards where it'll hang idly, flashing red around the edges to indicate that it's vulnerable to attacks. **ATTACKING** the pincer sends it spinning around to the baby condor on top of the cuckoo clock, who then takes damage. As the claw makes its way around to the baby condor, the clock descends a little to reveal the impact, before returning to its neutral position with the vulture off-screen. If the claw seizes Wario, it'll pick him up and carry him to one of the saw blades. Held by the claw, Wario changes direction when the player presses left or right on the d-pad. This feedback leads the player to realise that by hammering the d-pad, they can free Wario from the grip. Because the clock constantly moves from left to right, it will inevitably cross Wario and prompt the player to respond.

This initial phase teaches the player how to attack Cuckoo Condor and establishes the framework for the later phases. Reflex skills are needed to avoid the claw, and dexterity skills are needed to break free from its grip. After two hits, the boss enters phase 2.

PHASE 2

Cuckoo Condor activates the saw blade generator on the clock's right arm. Only one blade is spawned at a time, and once ready, it sits in wait. After some time, the blade starts spinning until fast enough to be dropped to the ground, where it slowly moves towards Wario and continues moving before disappearing off-screen. The blade gives the player another variable to monitor when baiting and **ATTACKING** the claw (knowledge). Because the saw blade is a moving threat along the ground Wario **ATTACKS** the claw on, the player needs to adapt their strategies around the relative position of the blade (adaption). This involves predicting the movements and timing of the clock, claw, and saw blade and foreseeing how Wario can work around them (further knowledge skills).

The saw blade's odd behaviour makes it hard to predict. Sometimes Wario will be standing right underneath it while it continues to spin on the generator, ignoring him. The spinning also stops and restarts every time Wario attacks Cuckoo Condor.

After another two hits, Cuckoo Condor enters phase 3.

PHASE 3

Cuckoo Condor activates the electric saw blade generator on the clock's left arm. The electric blades have minimal charge time, as they're spawned and dropped in the same animation. They also move along the ground faster than regular saw blades. Not only do the electric saw blades add another variable to retain and monitor, but because they're different from the regular blades, the player needs to distinguish between the two sets of data and, as a result, reconfigure the way they store and recall the information. This further stresses adaption and knowledge skills. With a second threat running along the ground, dexterity, reflex, and timing skills are also more pronounced. Three more hits and Cuckoo Condor enters its final phase.

PHASE 4

The clock falls apart, revealing the mother condor inside. The mother descends a little to bring the baby into view and Wario's throwing range. With the claw gone, the saw blades at either side of the room move off-screen. The mother drops white eggs behind her, which Wario can catch and throw at the baby condor. The means have changed, but the goal remains the same. The mother pauses at frequent intervals, making it easier to hit her baby. If an egg touches the ground, a chick pops out. The chicks slowly walk away from Wario before they suddenly turn around, flash red, and kamikaze towards him at twice the speed. The move away from Wario is a unit longer than the dash towards him. If the suicidal chicks don't hit Wario, they'll explode. Before they flash red, the chicks only knock Wario and then walk off in the other direction. Wario can jump on or THROW an egg at the chicks to remove them. The eggs can be destroyed by CHARGE THROWING them at a wall.

The chicks are a more sophisticated and aggressive threat to Wario's attacking platform than the saw blades. If the player's not careful, they can easily take control of the floor, as it only takes a few chicks to bump or hurt Wario, making way for a sudden influx. The chicks' swift change in behaviour as they turn around and rapidly home in on Wario can also catch the player off guard.

Since Wario must stand close to Cuckoo Condor to grab its eggs, the chicks explode only a unit from where they spawned, and the corners bunch the chicks and condor together, the majority of chicks not only stay

close to their mother, but detonate underneath her as well. With the ground surrounding Cuckoo Condor populated by chicks, the player's encouraged to JUMP and THROW as oppose to CHARGE THROWING, which leaves Wario vulnerable on the ground. As it takes more dexterity and timing to JUMP and THROW, the chicks elicit more skill from the player.

Every time Cuckoo Condor reaches the edge of the screen, it turns around and floats in the opposite direction, putting Wario in front while it continues to spawn chicks from behind. This frequent interruption can easily upend the player's progress. There are two ways to get back behind the condor: go underneath and avoid the exploding chicks or wait it out in the available corner. The player is again presented with the choice of potential hard punishment (loss of health) or definite soft punishment (loss of time). Since it's more difficult to dodge the kamikaze chicks than wait in a corner, the decision is also a form of scalable difficulty. The corners are safe zones as even when the chicks spawn in or next to them, they always explode 1 unit from where they originally landed. The chicks would need to land 1 unit off-screen in order to explode in the corners.

Adaption, knowledge, and dexterity are the key skills needed to defeat Cuckoo Condor. Since the mother's always spawning eggs, often changes direction, and the chicks in play are at different points in their animation cycles, the situation on the ground is constantly changing, forcing the player to adapt. Foreseeing each JUMP and THROW trajectory, while factoring in the active chicks and the condor's movement stresses knowledge skills. Dexterity is needed for the delicate ballet between the chicks and JUMP THROWS. The more hits Cuckoo Condor takes, the faster it moves and spawns eggs, stressing all areas of the skill spectrum. After seven hits, the battle's over.

The theme of the Cuckoo Condor battle is to maintain a clear mind in the face of increasing complexity. The initial three phases establish this notion by adding saw blades to the bait-and-ATTACK claw arrangement. Although only simple obstructions, if the player doesn't pay attention to them, the saw blades can reduce Wario's health reasonably quickly. The player must mentally juggle the status and relative position of three active game elements (the claw, saw blades, and electric saw blades) and strategise between them. Phase 4 introduces a fire hose of spawning obstacles and slowly increases the pump rate. Because there's an endless stream of chicks, it's easy to become overwhelmed and distracted by them, overexerting execution skills in the process. By observing and tracking the chicks' movement, the player can play smarter and more effectively, taking advantage of the enemies' simple AI and the safe zones in the corners. That

is to say, returning to the underlying theme of the battle, knowledge skills ease the burden of execution skills.

AERODENT

Timer: 4 minutes

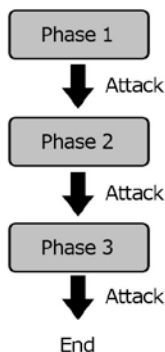
Combination: A rat and an inflatable bear

Minions: Tack Soldiers

In Short: Minimising the height difference through trajectories

Aerodent is a rat taking refuge atop an inflatable bear⁴. The name is a play on “air rodent”. I’ve classified the boss as having just one phase, and within that phase, an attack requires two to three times the number of interactions of a regular phase. So instead of several short phases of few interactions, Aerodent has one long phase of many interactions. Thus, an emphasis is placed on process and, due to the limited time frame, precision.

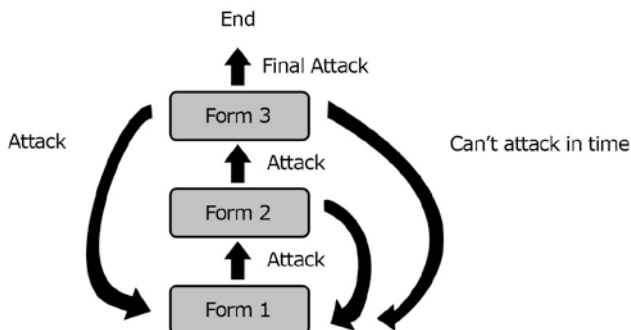
Linear Phase Structure



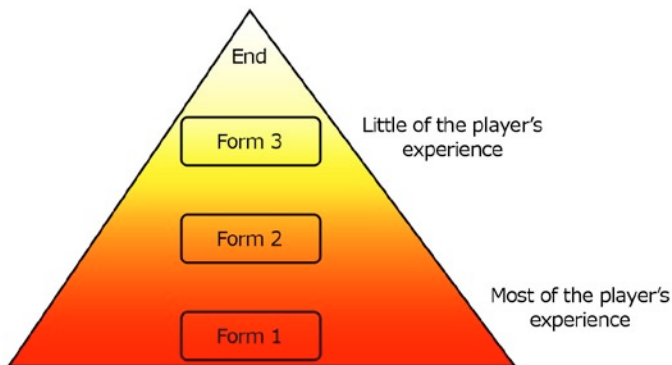
Aside from Aerodent, all bosses follow a linear phase structure where once the player completes one phase, they proceed to the next. As shown in the diagram, this is a downwards model as the player can’t, and has no need to, return to the previous phases. Because this model is linear and divides the encounter into segments, for form to fit function, the boss should appear closer to defeat through each passing phase. This includes, but isn’t limited to, getting angrier, bigger, stronger, more tired, or evolving into a more sophisticated-looking form.

⁴ Aerodent Video—<http://youtu.be/Jal3RWRcH5k>

Looping Form Structure



Aerodent follows a looping form structure where its single phase is broken into three parts, called forms. This is an upwards model, so think of these forms as being stacked together, with the first on the bottom and the third on the top. When Aerodent's in its first or second form, the player must meet certain conditions (attacks) to advance the boss to its subsequent form. If they fail to do so within a set time limit, the boss reverts to its first form. When Aerodent's in its third form, its weak point is revealed and the player can attack the boss until it returns to its first form.



Since Aerodent defaults to its initial form and the third form can only be reached through the first and second, the bulk of the player's experience is with Aerodent's first form, while the least of it is with its third form. This phenomena of the looping form structure, as conveyed by the pyramid in the diagram, has the following implications for gameplay:

- » Lose-and-review gameplay. If the player “*fails*” against one of Aerodent’s upper forms, they return to the bottom to review the lower form(s).
- » There’s a growing impetus behind the lower forms, as, with more practice, the player can complete them in a shorter time. This momentum propels the player up to the third form.
- » With so much time spent with Aerodent’s first and second forms, the player becomes proficient to the point of running on auto-pilot.
- » The player can see and feel themselves become better as they play, which acts as a motivation, spurring deeper engagement.
- » Because it takes so long to reach the top and the player only has 4 minutes to defeat Aerodent, there’s more riding on the third form. Therefore, when the player can finally knock some health off the rat, they’re likely to concentrate harder than usual so as not to waste the opportunity.
- » The rat pops his head out for an extended window of time, which allows the player to attack the boss multiple times, channeling the build-up to that point.
- » Since Wario can only attack Aerodent after following a long sequence of interactions, process is stressed.
- » The player always feel as though they’re starting from scratch.

The core difference between the linear phase and looping form models is that in the former, Wario moves from one segment to the next and in the latter, Wario loops around to the base segment. The linear phase model is strict, regimented, and tends towards shorter interactions, while the looping form model allows for variable progression, albeit with more repetition, and tends towards a longer series of interactions.

The difference between forms and phases is that forms are governed by time and attacks, while phases are only governed by attacks. Forms are fluid and temporary. Once the player reaches a form, they can, and likely will, return to the previous forms. Phases are solid and permanent. Once the player reaches a phase, they can’t go back. I make this distinction not just for clarity, but so that I can emphasise the lengthier attack process which defines Aerodent.

Aerodent’s forms and the interactions required to advance them are presented below:

Form 1: Aerodent floats at the top of the room while Tack Soldiers parachute down on Wario

- » Paralyse a Tack Soldier and CHARGE THROW or JUMP and THROW it into the centre of the inflatable bear

Form 2: The bear lowers and the yellow pads on either foot flash

- » ATTACK JUMP one of the feet

Form 3: The bear flips over, revealing the rodent

- » ATTACK JUMP the rat to reduce its health

Tack Soldiers are miniature army men that parachute into the boss room. Their pointy spike hurts Wario. Attacking them removes them from play, prompting another Tack Soldier to drop in. Jumping on their head paralyzes them. I've included an interplay diagram on the online portal for reference⁵.

Form 1 can be broken down into the Tack Soldier's states:

Pre-Falling: A sound plays, alerting the player that a Tack Soldier will soon fall from the top of the screen.

Falling: The Tack Soldier enters, slowly falling to the ground. With their spike pointing down at Wario below, they're a threat, albeit one that can easily be avoided. If bumped or let fall, the Tack Soldier enters the attacking state.

Attacking: The Tack Soldier jumps from left to right. Their jumps have tall arcs which lead to sudden falls, giving the player minimal time to dodge their sharp-tipped springy boots (reflex). The unit gap between each jump tests the player's understanding of Wario's hit box, similar to Cractus's saliva raids. Because there's just one Tack Soldier and it can only cover a limited area at a time, the enemy is easier to avoid, so the hit box test isn't so rigorously enforced. Bumping the Tack Soldier only displaces it a little. JUMPING up under it, not quite touching the spike, boosts the enemy up into the air.

Paralysed: The Tack Soldier falls to the ground, pin side up, unable to exit the state. Wario can then PICK UP the enemy and throw it at the inflatable bear. Some precision is required, as the bear floats from left to right and the spike must hit it in the centre, not the feet. CHARGE THROWING the Tack Soldier into a wall destroys it.

The tug of war between the rat and Wario, the former attempting to keep a safe distance while the latter tries to shorten it, is the contextual basis of the battle. When Wario enters, the rat inflates the balloon and ascends to the ceiling, hiding off-screen. Puncturing the inflatable teddy bear with a Tack Soldier lowers it so Wario can then flip it over, revealing the rat attempting to blow air back into the balloon. After taking a few hits, the rat manages to inflate the balloon enough to retreat back to the ceiling.

5 Tack Soldiers Interplay Diagram—<http://danielprimed.com/wp-content/uploads/2011/03/tack-soldier-interplay.jpg>

In form 2, if Wario knocks the bear or attacks its feet before they start blinking, the balloon will float upwards, out of reach, and Aerodent will return to its first form.

The confrontation changes as Aerodent loses health, adding variation to the boss's somewhat repetitive structure. After each hit, the Tack Soldiers fall quicker. After four hits, the rat throws fireballs in form 2. After twelve hits, it throws fireballs in all forms. The rat targets the projectiles at Wario so as to displace him and interrupt the player's flow (reflex, adaption). When the fireballs hit the floor, flames spread along the ground. Similar to Spoiled Rotten's walk and Cuckoo Condor's blades and chicks, the flames add another variable to juggle and force the player to mixup their tactics, as they temporarily disable parts of the ground Wario attacks on. The fireballs are well suited to this process-focused battle as the punishment, Flaming Wario, not only delays Wario's progress for a few seconds, but allows Aerodent to revert to its first form.

There are only two threats, fireballs and Tack Soldiers, and neither of them pose much of a risk. That's because the timer prompting Aerodent's reversion to its first form is already punishment enough. Unlike the other boss fights, which focus on hard punishment, the looping form structure shifts the emphasis to time and the core penalties to soft punishments.

Since Aerodent is always above Wario and many of the mechanics that deal with vertical space are limited by curved paths, trajectories are a critical part of what makes the boss engaging. Just to give you an idea, here's a list of the trajectories the player needs to foresee, monitor, and respond to in order to defeat Aerodent:

- » The Tack Soldiers' fall
- » Wario's JUMPS onto the Tack Soldiers
- » Wario's throws of the Tack Soldiers into the teddy bear
- » Wario's ATTACK JUMPS into the teddy bear's feet
- » Wario's ATTACK JUMPS into the rat
- » The fireballs' fall
- » Wario's potential fall into the fire

Defeating Aerodent is all about process and precision. Process, because there are many actions that go into one attack. Precision, because one mistake means starting the chain from the beginning. Knowledge skills play a dominant role, as throughout the battle, the player needs to learn, remember, and recall the collective process and intricacies of each form. (Not to mention managing the trajectories). Since Wario can ATTACK JUMP

Aerodent up to seven times in one go, the player can scale the difficulty (dexterity). By flexing their knowledge and dexterity skills, the player can significantly shorten the length of this cyclic boss battle.

CATBAT

Timer: 4 minutes

Combination: A cat and a bat

Minions: Drill Fish, purple Puff Balls, and red Puff Balls

In Short: Quick inputs and management of trajectories to avoid falling into the water

Catbat floats across a pool of water, pounding downwards to send waves at Wario⁶. The waves are both a hazard, pushing Wario into the water with the Drill Fish, and a means to attack Catbat, doubling as temporary platforms from which Wario can ATTACK JUMP/SMASH ATTACK the animal hybrid. Using additional level elements to gain a height advantage over the boss for a SMASH ATTACK—sounds familiar, doesn't it? Catbat isn't all that different from Cractus, except that:

- » The floor is broken into three platforms and suspended above water.
- » Vines are replaced with waves generated by Catbat. The crests of the waves are temporary platforms, while the bodies push Wario into the water.
- » In the first two phases, Wario needs to ATTACK JUMP the cat crown. In the last two phases, Wario needs to SMASH ATTACK the bat's head. I've covered these interactions in the Aerodent and Cractus boss battles. The temporary, moving state of the platforms elicits faster reflex and dexterity.
- » The hit box of Catbat's head is larger.
- » If Wario attacks Catbat anywhere apart from its weak point, it'll spit out a purple Puff Ball. This enemy transforms Wario into Puffy Wario when touched.
- » After attacking Catbat's weak point, the animal hybrid coughs up three Puff Balls.
- » Catbat doesn't attack directly. The Drill Fish and red Puff Balls are the hard punishments.
- » Touching Catbat only knocks Wario backwards.

6 Catbat Video—<http://youtu.be/nYscS8oYsM0>

- » Catbat never changes its movement pattern, left to right and back again.
- » When Wario transforms, gets behind Catbat, or the boss reaches the edge of the screen, the animal hybrid floats faster until it's off-screen and then reemerges on the same side of the room, facing the other direction.

The gaps in the floor make it easy to fall into the water. The Catbat and waves, through their size and space-encroaching movement patterns, push Wario into the water. By virtue of having to drop Wario back onto a platform after exiting the Puffy Wario transformation, the Puff Balls give the player an opportunity to accidentally land Wario in the water. What these elements have in common is that they converge on water as the primary means of soft punishment. The Drill Fish then allows the soft punishment to scale up to include hard punishment.

As a trio, the Puff Balls float towards Wario in a consistent pattern (two low, one high). They prompt the player to move Wario through the hoop and control the height of his jump.

Once a wave reaches the edge of the screen, Catbat spawns another, so there's always one in play.

PHASE 1

The waves are always at full height, and Catbat throws up three purple Puff Balls after being attacked. Wario must **ATTACK JUMP** Catbat's cat crown.

PHASE 2

After three hits, every second wave dips and rises, throwing off a clear trajectory to the cat crown and adding a time element to the platforms.

PHASE 3

After another three hits, the cat crown falls off, revealing an abhorrent patch of bare head. Wario must now **SMASH ATTACK** the bat's head. All waves rise and fall and move at a faster speed. Not only is the method of attack more difficult, but the means is further obscured. The purple Puff Balls are replaced with red versions that hurt Wario if touched.

PHASE 4

With one bar of health left, Catbat coughs up a single red Puff Ball after each wave. The waves themselves also move quicker. There are fewer opportunities to attack and more opportunities to take damage. The waves and Puff Balls are brought closer together, enhancing their overall effectiveness.

Catbat is a mash-up of previous boss battles with a few unique twists. Managing the trajectory of Wario's ATTACK JUMP and SMASH ATTACKING from a raised height, onto the boss's head, are familiar territory. The waves and floor, however, offer a different take on the same time and space dynamics. Since the waves are constantly moving out of Catbat's range, both horizontally and vertically, the player only has a short time to reach the crest, check the trajectory, and execute the attack. The time frame stresses knowledge, timing, and dexterity. Furthermore, because the waves alter Wario's relative position to Catbat, they force the player to constantly reevaluate the attack. With the floor divided into three platforms, in planning their approach, the player must predict and factor in where Wario will land after attacking Catbat, deflating Puffy Wario, and dodging the Puff Balls, as one minor oversight can see him facing the pointy end of the Drill Fish. This added consideration underscores each interaction, heightening knowledge skills.

GOLDEN DIVA

Timer: 6 minutes

Combination: The Golden Diva and the jewellery from the previous bosses

Minions: Masks, green bugs, teddy bombs, black eggs, black chicks, and spiked hammers

In Short: Predicting movement patterns and trajectories and acting on them through a variety of game elements

The Golden Diva wears the four pieces of jewellery Wario earns for beating each of the main passage bosses: the crown (Cractus), earrings (Cuckoo Condor), necklace (Aerodent), and bracelets (Catbat)⁷. She uses the jewellery to spawn game elements based on the abilities of the original bosses. These items and creatures can both hurt Wario and be used against the diva. The green bugs resemble Cractus's leaf hands. The black eggs replace Cuckoo Condor's white eggs. The teddy bombs have a picture of Aerodent's inflatable bear. The spiked hammers have no relation to Catbat. Aside from the black eggs, the similarities are only contextual, not functional.

The back wall stores up to twelve treasure chests. The number of chests present depends on the player's time performance in the previous boss rooms. The flame-lit chandeliers and glistening jewel shards hardened in the ground help sell the room as the pyramid's treasure vault.

⁷ Golden Diva Video—http://youtu.be/PM7z_oEzk68

To make up for the Entry Passage's minute-long boss battle, this confrontation runs for 6 minutes and the Golden Diva has eight phases and a full health bar. Pre-battle, a short sequence shows the black cat, present throughout the pyramid, being sucked into the mask, suggesting that it's a potential weak point.

PHASE 1

The Golden Diva covers her face with a fan and floats slowly from left to right at the top of the room. Four semi-transparent masks circle the fan, one of which, becoming fully visible, makes rough figure eights at the bottom of the room. If Wario touches this mask, it'll grab him and knock him around the room, wasting time. Jumping on the mask paralyzes it, breaking its flight, which allows Wario to then **PICK** it **UP** and **CHARGE THROW** it at the fan. Each attack destroys the mask and damages the fan a little bit. The subsequent masks move successively faster. If the player leaves a stunned mask on the ground too long, it'll fly back up and join the others. Once all the masks have been used against the Golden Diva, her fan breaks and she advances to the next phase.

Phase 1 has two parts which are repeated four times: jumping on a mask and **CHARGE THROWING** it at the fan. The first part involves observing a mask's movement to predict when it'll reach a vulnerable position (knowledge) and then jumping on it when that time comes (timing, reflex). Because the masks move slowly and have a simple, predictable movement pattern (bounce off the walls in straight lines), they're easy to paralyze. The player needs to adapt to the successively faster speeds.

In the second part, the player uses less knowledge skills (because the diva only moves in a straight line), more timing skills (because they need to account for the throw's charge), and no adaption skills (because the diva's movement pattern remains constant). The Golden Diva's predictable movement pattern make phase 1 a warmer for phases 2 to 6, where she floats around in a more sophisticated manner.

PHASES 2 TO 5 OVERVIEW

With no fan, the Golden Diva swoops around the room, spawning game elements from her recently-acquired jewellery. Phases 2 to 5 each focus on a different game element which Wario must use to attack Golden Diva's face. The pale-faced queen only spawns one item at a time. The items decay or move off-screen if untouched for some time, leaving the boss to spawn another one. It only takes one hit for the diva to advance to the next phase.

As most players will quickly realise, it's best to attack Golden Diva when she slows to a pause on the upswing. Because her movement pattern remains the same over the four phases, the knowledge, timing, and dexterity skills needed to monitor, predict, and respond to her swings are transferable across phases. Therefore, the closer to phase 5, the more experience the player has with Golden Diva's movement patterns and the easier it is for them to deal with the boss. This frees up more of the player's energy for mastering the unique game elements. Each item provides a different means to attack the Golden Diva, which keeps the individual phases fresh and engaging (variation).

PHASE 2

A green bug spawns from the Golden Diva's crown and swings back and forth, almost covering the length of the room. As with phase 1, Wario must jump on the potential projectile and then CHARGE THROW it at the diva's face. THROWS are ineffective. On its second sweep, the bug isn't quite low enough for Wario to get above it. He can only match it for height, making it easy to misjudge the jump and hit the enemy's spikes. Players best wait for the third swing. Once the green bug drops below ground level, it becomes semi-transparent and can't touch Wario. This measure prevents Wario from paralysing the enemy underground or unfairly taking damage on its unsuspecting upswing.

Phase 2 provides three forms of engagement:

- » **The green bug's swing which dips fast and rises slow.** The curved trajectory combined with the swift changes in speed make it difficult to foresee when the bug will enter a full JUMP'S range (knowledge). The unexpected speed of the fall elicits quick reflexes, grabbing the player's immediate attention.
- » **Finding Wario's throwing position relative to the Golden Diva.** This is engaging as the player not only has to learn the diva's new movement pattern, but must also account for the CHARGE THROW'S horizontal skew.
- » **Timing.** There are two aspects to timing Wario's CHARGE THROW: determining whether there's enough time for Wario to charge the mechanic before the Golden Diva arrives in her assumed position and judging how long it takes the boss's swing to slow to a temporary stop, the sweet spot in which to CHARGE THROW.

PHASE 3

A teddy bomb spawns from the Golden Diva's necklace. The explosives operate on a timer. ATTACKING one sends it bouncing off the walls until it hits Wario, the Golden Diva, or detonates in mid-air. This phase requires a different set of knowledge skills to the prior two as, when mentally connecting a path between the bomb and Golden Diva, the player must not only think in straight lines (as opposed to curved trajectories), but also consider how the walls and ceilings determine the bomb's path.

PHASE 4

A black egg spawns from the Golden Diva's earrings. As with the Cuckoo Condor battle, Wario needs to catch an egg and CHARGE THROW or JUMP and THROW it at the boss. The minor differences between the black and white eggs subvert the player's expectations (adaption). These changes include:

- » The black chicks move further towards Wario, primed to detonate, than they do away from him.
- » On catching a black egg, it starts flashing. The player only has a few seconds to then get rid of it before it explodes.
- » The Golden Diva can spawn black eggs from either side.

Because there's only ever one black chick in play at a time and Wario has a short time to dispose of the egg, the emphasis is shifted away from knowledge and adaption and onto reflex skills. The egg's timer prompts the player to JUMP and THROW, as CHARGE THROWING can be risky.

PHASE 5

A spiked hammer spawns from the Golden Diva's bracelet. A few seconds later, the spikes disappear. Wario can throw the hammer into the air, be struck by it to transform into Bouncy Wario, and then spring jump into the Golden Diva's face. The hammer looks identical to the one Menhammers carry around. This makes it easier for the player to draw the connection between the game element and the transformation. Yet their instincts tell them to throw the hammer at the Golden Diva's face, because that's what worked in the previous phases (context setting). The player must get past this red herring and trust the visual form of the hammer (knowledge). If it weren't for the spikes, there'd be no risk and the player'd be given a free ride.

Phase 5 is a mix bag of old and new interactions. As with phases 1, 2, and 4, Wario must PICK UP the projectile. Throwing the hammer away from the Golden Diva requires the player consider the area surrounding the pale-faced

queen, when it's free, and how long it'll take the diva to occupy it. That is, they need to invert and re-adapt the way they think about her movement patterns. Getting underneath a falling hammer is akin to grabbing a black egg. To spring jump into the diva's face, the player must predict where the boss will swing to and move Wario into position earlier (knowledge), as Bouncy Wario's horizontal movement isn't as fast nor as precise as regular Wario's.

PHASE 6

Phases 2 to 5 are repeated once, after which Golden Diva spawns items at a fixed pace, regardless of how many other items are already in play. Since each game element has a fast burn rate, there's usually only two, maybe three, in play at the one time. The interplay between the items make the battle hectic and unpredictable. Hammers stun green bugs, black chicks cause Wario to drop hammers, and black eggs knock green bugs out of Wario's hand. With each hit, Golden Diva spawns new items faster. Adaption skills are needed to keep control of the situation. The fast burn rate and continual influx of items tempts the player to jump from one to the other, yet to beat Golden Diva, they need to stick with one item at a time. The arrangement thereby challenges the player to conquer their compulsions, in pursuit of a focused goal. After four hits, Golden Diva enters phase 7.

PHASE 7

Golden Diva's face stretches vertically. She grows bulky arms and her body loses its transparency. Floating from left to right, with new-found strength the diva slams downwards when Wario aligns vertically. Although these attacks don't directly hurt Wario—the slam only bumps him—they break a unit of ground, revealing a layer of spikes. The more ground cleared, the more significant that bump becomes. Golden Diva removes terrain until either Wario defeats her or the floor is a bed of spikes. (Yes, I did try the latter). To do the former, the player needs to elicit a slam, dodge, turn around, and ATTACK JUMP her face while she's in range. Her elongated face implies that a horizontal attack is necessary (form fits function). The quake from Golden Diva's attack can stun Wario as he's moving into position for the ATTACK JUMP, giving her enough leeway to float out of range. As a precaution, the player can JUMP after they dodge. After three hits, it's on to phase 8.

Dodging the slam requires reflex. Dodging the quake requires timing, as the player must ask themselves *"If I press 'A' now, will Wario be in the air by the time the quakes hits?"*. Before Wario ATTACK JUMPS Golden Diva, the player must visualise the mechanic's arc and the boss's vertical position to first confirm whether or not they can land a hit (knowledge). Otherwise, Wario

could miss and land on the spikes. Because the player has to execute multiple actions in such a short time, dexterity is stressed. With the floor disappearing beneath Wario, the player must constantly re-strategise (adaption).

PHASE 8

The Golden Diva's lips flail helplessly as Wario is left to make the last move.

The variety of interactions and marathon duration make for a fitting conclusion to *Wario Land 4*. Because many aspects of this final battle are derived from earlier boss encounters, the confrontation has a sense of closure. Some examples include:

- » Full JUMPING and determining the height of enemies (Spoiled Rotten)
- » External game elements enabling attacks (Cractus)
- » Throwing projectiles, baiting through vertical alignment, and dodging (Cuckoo Condor)
- » ATTACK JUMPING a moving target (Aerodent)
- » Contending with a gap-filled floor (Catbat)

As a narrative, the boss has three acts: Golden Diva hiding from Wario, using the jewellery to attack him, and attacking him for herself. In line with R&D1's subversive approach to design, Golden Diva isn't a particularly strong boss. Thus, she tries to avoid direct confrontation by hiding behind her fan and then allowing the jewellery to do the fighting for her. It's only at the end of the battle, once Wario has aggravated her, where she attacks outright.

PASSAGE THEMES

In *Digging Deeper*, I established *Wario Land 4*'s base units of meaning and narrative, often alluding to a bigger picture. That bigger picture is passage themes, the combination of game ideas from each level in a passage, unified by patterns in the level and visual design. Passage themes are the chapters to *Wario Land 4*'s story. The Entry and Golden passages only have one level each, so their passage themes are the level's game ideas. The four main passages have four levels each, so their passage themes are more substantial. As the link between the levels and bosses is a tenuous one at best, primarily contextual, I'm going to spare you the straw-clutching by just focusing on the levels. Because each passage is unique in how they bridge together game ideas, there's no need to mull over considerations—we can jump right in.

EMERALD PASSAGE

Passage Theme: Nature and Nurture

Game Ideas: Continued tutorial, concealment, ATTACK/DASH ATTACK dichotomy, vertical movement, underwater adventuring, swinging from tree to tree

There are two underlying themes in Emerald Passage, the environment and the extended tutorial. Each level's setting organically transitions into the next. Wario begins on a beach and moves inland to a flowery forrest and lake, before wadding deep into a monsoonal jungle. The mood edges from bright and open to dank and closed as the difficulty rises.

As for the tutorial, Emerald Passage covers the mechanics, transformations, and essential game elements that the Entry Passage didn't have room to teach. Palm Tree Paradise is straightforward to the point that it primarily serves to fully introduce the folded level design and puzzle rooms. Wildflower Fields focuses on Fat and Puffy Wario, the two most common transformations in the game. Mystic Lake addresses the swimming mechanics, while Monsoon Jungle re-examines the transformations. After completing the passage, the player is fully equipped to take on the rest of the game.

The pleasant nature aesthetic works in harmony with the extended tutorial. This theme is rather ubiquitous in video games. Titles like *Contra*, *Donkey Kong Country*, *A Boy and His Blob*, and *Metal Gear Solid 3: Snake Eater* all begin in outdoor, grassy environments before entering more industrialised settings.

RUBY PASSAGE

Passage Theme: Technology

Game Ideas: Mechanisation and Taylorism, garbage archaeology, snow and ice, pinball machine, loading pinballs into catchers

Speaking of industrialised settings, Ruby Passage's levels are not only based on different aspects of industrialisation, but Wario's interactions within are somewhat machine-like in nature. In The Curious Factory, the conveyors, decompressors, wheel platforms, and crushing machines automate Wario's interactions or divide them into a series of smaller interactions. This is not unlike Taylorism, a form of social management used in factories, which partitions labour into its smallest possible units and has machines take over some simple, repetitive tasks. The Toxic Landfill explores the consequences of mass production. The player must search the garbage for clues so as to make their way through the rubbish tip. The scan-identify-remove process inherent to the level's design facilitates drone-like behaviour. 40 Below Fridge has the player engage with snow and ice. Although it's perhaps a dubious connection, the level carries the theme on the premise of the freezer, a machine, simulating a natural, wintery environment. Where The Curious Factory has Wario interact with various disconnected parts of an assembly line, Pinball Zone is a much more cohesive representation of a machine. The level consists of a back and front board. Wario inserts pinballs from the back, which then allows him to ascend from the front. The player is an active participant in the functioning of the machine.

TOPAZ PASSAGE

Passage Theme: Childhood

Game Ideas: Sequence puzzles, board game, arts and crafts, race against falling dominos

Topaz Passage's four levels are each centred around a childhood activity. Because the game ideas are created with exclusive level elements (cat blocks, dice switches, a game board, Hoggus, push pencils, starters, and enders), not only are the levels isolated from one another, but the passage as a whole is detached from the rest of the pyramid. For this reason, Topaz Passage's theme is a collection of concepts as opposed to an interconnected narrative. This structure has allusions to the play group activities in primary school where students rotate to a new activity each week.

In the other five passages, the player can only finish a level by completing the chain of restricted-to-freer practice arrangements. In Topaz Passage, the arrangements are optional and can be avoided altogether, which makes the passage theme optional and therefore secondary, if not, irrelevant. Worse still, by not enforcing education and mastery, the passage is the least engaging part of the game. One could infer that the optional challenge ties into the childhood theme, being more kid-friendly.

On hard, this isn't the case as the jewel piece chests tend to be the rewards for solving the arrangements.

Contrary to the disconnected narrative and optional arrangements, there is one area where the levels build, and that's in their increasing persuasion to convince the player to complete the arrangements. In Toy Block Tower, the crystal rewards and the player already being conditioned to beat the arrangements are the core motivators. In The Big Board, the level design facilitates the player's realisation of the solutions to the arrangements, which prompts them to follow through. In Doodle Woods, Hoggus spawns enemies in Wario's path, so the player can't just ignore them. Post-fold, the player must use the push pencils. In Domino Row, the race set-up and unknown consequences of losing draws the player into participation.

The walls of the passage are marked with chalk drawings.

SAPPHIRE PASSAGE

Passage Theme: Horror

Game Ideas: Being pursued by a ghost (Yurei), riding a magic carpet, fire and ice, hotel building structure

Zombie and Vampire Bat Wario form the back bone of Sapphire Passage's horror theme. These transformations are established over Crescent Moon Village and Arabian Nights, abandoned in Fiery Cavern, and returned to in Hotel Horror, albeit in a limited form. Yurei, the Keyzer-stealing ghost, and the Men'onos, placed to catch the player off guard, supplement the transformations.

The vista behind Hotel Horror has the crescent moon and church spires from Crescent Moon Village and is set at night, like Arabian Nights. It's possible that the three areas are connected.

CONCLUSION

Each passage establishes its theme differently. Emerald Passage does so through a connected landscape, Ruby Passage through mechanical metaphor, Topaz Passage through level-exclusive gimmicks, and Sapphire Passage through a mixture of these devices. From interaction set in context to game ideas and passage themes, we've formed a complete picture of *Wario Land 4*'s interactive narrative.

MINI-GAMES

Near the end of each passage is the Mini-game Shop, where players can exchange 5,000 coin units from the global kitty for a go at one of three mini-games. Performing well in the mini-games nets the player medals, which they can use in the Item Shop before the boss room. The items on sale weaken the passage's boss prior to the start of the battle. Each item is super effective against one of the bosses, as listed below:

- » Cractus – Black Dragon
- » Cuckoo Condor – Big Fist
- » Aerodent – Big Kiss
- » Catbat – Black Dog

The medal system provides a means to ease the difficulty of the bosses in exchange for partaking in the mini-games. Rather than dumbing down the challenge for less-experienced players, they're given an alternative way to engage with the game. On hard and super hard, where the boss battles are more challenging, the player's more likely to rely on the mini-games for support.

The mini-games are simple skill testers, as outlined below.

WARIO'S HOME RUN DERBY

Wario's Homerun Derby has the player hitting balls in a baseball stadium with a press of the A button to swing the bat. The sport is distilled down to the knowledge, timing, and reflex of tracking the ball, envisioning it ready for the shot, and swinging the bat. The 360-degree swing (extended animation) prevents the player from spamming the mechanic.

Hits are home runs. Misses are strikes. Hitting too soon or too late results in a foul. Three strikes, you're out. Fouls equal strikes, but only up to two strikes: you can't foul out. A home run cancels all previous fouls and strikes. This may sound confusing, but the graphic to the right of the bat simplifies it to *"if you strike when two balls are red, you lose"*. Home runs are tallied, and the player is rewarded with a medal every three runs. The more home runs, the faster the game and the greater stress on reflex skills. Before the pitcher throws the ball, his head movements indicate how he'll throw.

- » Two nods—fast ball
- » Two shakes, one nod – slow ball
- » One shake, one nod – curve ball
- » One shake, one nod, one shake – disappearing ball

The fast ball tests reflex. The slow ball tests timing. The curve ball tests adaption. The disappearing ball vanishes, leaving the player to visualise the target continuing on its path, so there's a bit of knowledge and timing there. The four throws shift the skill away from timing and reflex and onto knowledge. By memorising the head movements, the player doesn't need to interpret the throw as it's happening. Rather, they can spend more time preparing for the reaction. As the speed of the game increases and reflex and timing skills are more and more stressed, saving those few microseconds becomes pivotal. Every now and then, a cheerleader comes out and dances as a reprieve from the tense concentration.

The fast and slow balls sometimes speed up or slow down right before the bat (adaption). Because they're unexpected, these mixups are usually the main cause of striking out.

THE WARIO HOP

Wario walks on a rolling wheel through the desert, jumping over random obstacles to the beat of a music track. Press A to jump. Hit an obstacle and you're out. Wario is rewarded a medal every fifteen jumps. After thirty-eight jumps, the game speeds up. After ninety-four, it speeds up further. The faster the game speed, the greater stress on reflex skills. By jumping to the rhythm of the music, the player can substitute reflex skills for timing skills.

This mini-game could be considered a precursor to the *Rhythm Heaven* series, given the two have similar gameplay and are made by the same developer.

WARIO ROULETTE

Set in a barber shop, eyes, a nose, and a mouth appear on a blank face. The facial features disappear, and three pairs of eyes whizz past in continual rotation, one of them being the one just on-screen a second prior. The player presses A to select the original face's pair of eyes before moving onto the nose and mouth. Every five correct faces, the player earns a medal. One mistake ends the game. Later, there's more facial features to choose from and they're harder to tell apart. Wario Roulette is a short-term memory game of visual objects.

TOPICAL ESSAYS

WARIO LAND – AN EVOLUTIONARY HISTORY

FROM 8 TO 16 BITS IN A YEAR AND A HALF – WARIO LAND 3 TO 4

FROM ODD TO OFF-KILTER - THE TRANSITION INTO WARIOWARE

THE CUTTING ROOM FLOOR - BETA VS. FINAL GAME

WARIO - A PERSONALITY PROFILE

MARIO AND WARIO – A CHARACTER COMPARISON

LOOSE ENDS

CREDITS

WARIO LAND – AN EVOLUTIONARY HISTORY

WARIO LAND – AN EVOLUTIONARY HISTORY

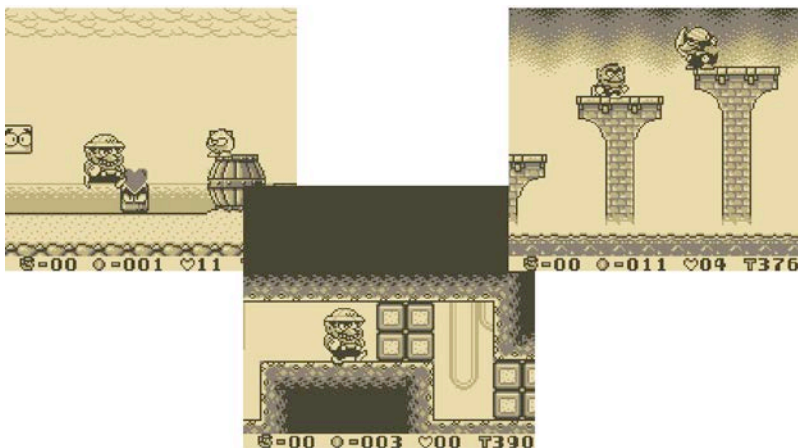
[The following article was written by AJ Johnson. AJ writes for 8-Bit Horse, a blog specialising in long-form writing on 2D game design, set up by independent game developer Mommy's Best Games. You can find more of his work at 8bithorse.com.]

Wario made his first appearance in 1992, cast as the villain and final boss of *Super Mario Land 2: 6 Golden Coins* on the Game Boy. While he didn't have much of a presence in the game, his addition to the Mario universe was an important one as it led to the creation of a new franchise for Nintendo.

Wario officially claimed the series as his own with *Wario Land: Super Mario Land 3*, offering an experience built heavily on the foundations of the *Super Mario Land* series. However, Nintendo continued to tweak the formula with each new iteration, eventually resulting in something that had gameplay all its own.

By the time *Wario Land 4* was released, the game bore little resemblance to its progenitor. Yet *Wario Land 4* is really just a more focused version of *Wario Land 3*, which was an expansion of *Wario Land 2*, whose core design was based on the original *Wario Land*. It is with this in mind that we set out to explore the iterative changes that have driven Wario's evolution.

WARIO LAND: SUPER MARIO LAND 3



Right away, Wario is established as a more hands-on character than Mario, and therefore more violent. While Mario freely dispatches enemies with a hop on their heads or a bump from beneath a block, these actions in *Wario Land* merely stuns enemies. To remove a foe, Wario has two options: body slamming (ATTACK) or stunning them, picking them up, and tossing (THROW) them into other enemies.

Wario has a few navigational abilities, including the ability to high jump (by pressing up on the d-pad while jumping; full JUMP), freely swim underwater, and duck (CROUCH) and crawl (CROUCH WALK) into tight spaces. Carrying over from the Mario games, grabbing a star makes Wario temporarily invincible.

To supplement these skills, Wario also has the ability to transform into more powerful versions of himself. Just like his do-gooder doppelganger, Wario can find power-ups hidden in blocks. These power-ups allow him to change from his default form and gain new abilities. Wario retains these abilities until he takes damage, at which point he returns to his standard form.

Bull Wario, represented by a hat with bull horns, gives Wario enhanced strength. Blocks that require two hits to destroy in his standard form can now be broken in one. Wario gains a butt stomp move (SMASH ATTACK) that allows him to slam the ground and stun nearby enemies, or destroy them with a direct hit. Wario can also jump up and stick to ceilings, with his horns firmly planted in the rock.

Jet Wario, represented by a winged hat with a jet engine, gives Wario limited flying abilities. Wario can fly through the air in a straight horizontal line by

performing a body slam. The hat eventually runs out of jet power, causing Wario to fall back down to the ground. Wario also walks faster and jumps higher when wearing the hat. This form is not offensively as powerful as the others, but it allows for rapid movement through the environment, making it easier to explore the levels.

Dragon Wario, represented by a hat with a dragon's head, shoots short bursts of fire from its nose like a flamethrower, replacing Wario's standard body slam. The fire can break blocks and defeat enemies, but only for a short time before it runs out and must be fired again. This limitation prevents players from simply steamrolling their way through the game with the flamethrower activated at all times.

Taking damage in his normal form causes Wario to turn into Small Wario. In this form, Wario loses the ability to body slam and must therefore rely on avoiding enemies, stunning and running, or picking them up and throwing them. If Small Wario takes damage, he loses a life. The player can collect garlic to return Wario to his regular form.

Like the Mario games, Wario can also collect coins, but rather than being used as a means to gain extra lives, they can be used to open certain doors, buy into mini-games (to earn more coins, hearts, or 1UPs), and tossed at enemies as a weapon. They're even used to save the game. Extra lives are gained by collecting a hundred hearts rather than a hundred coins. Hearts can be earned by beating enemies and breaking item boxes. They encourage a more hands-on approach.

Making it through the game isn't a simple matter of moving from one level to the next. Many of the levels have alternate paths containing treasures and secondary exits. Each secondary exit opens up a new level on the world map. Some backtracking to previous levels is required to open them all. What's more interesting is that defeating bosses causes environmental changes, sometimes overhauling the entire layout of a level, facilitating access to new areas.

If Wario finds a key, he can use it to open a Treasure Room and acquire the treasure within. Each treasure is weighed in coin units. At the end of the game, there are multiple outcomes based on Wario's earnings, a combination of collected coins and treasures. Wario even makes an appearance, much to Wario's chagrin.

VIRTUAL BOY WARIO LAND



Wario's first foray into 3D, *Virtual Boy Wario Land*, is a side-scroller with 3D effects. For example, 3D-style boss encounters, pendulums swinging into the foreground, and the ability for Wario to jump back and forth between foreground and background to find keys and solve puzzles.

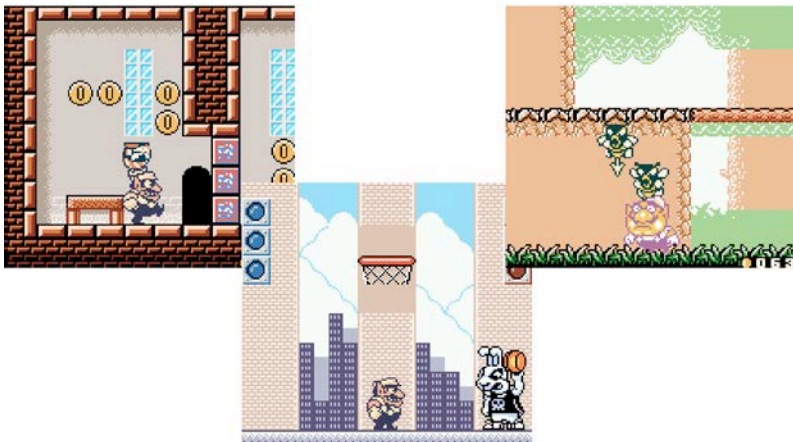
Virtual Boy Wario Land was released not long after the original *Wario Land*, so Wario's standard repertoire of moves are carried over. He does lack the high jump mechanic though, which is substituted with a higher standard jump.

As before, power-ups come in the form of gameplay-altering hats which are equipped by finding special items in the environment, often by bumping blocks. Bull Wario, Jet Wario (Eagle Wario), Dragon Wario (Sea Dragon Wario), and Small Wario return. King Dragon Wario is an entirely new form, combining both the Eagle Wario and Sea Dragon Wario forms. By touching both an Eagle Statue and a Dragon Crystal, Wario can take to the skies and deliver some serious hurt with a long-range projectile attack.

Wario is once again on the hunt for coins and treasures. Coins allow him to buy into mini-games where he can earn more coins and hearts. There are several treasures hidden throughout the game which, if all collected, allow the player to see a special ending. Collecting a hundred hearts grants Wario an extra life. Diamonds are instant 1UPs.

Rather than navigating levels from a world map, Wario progresses linearly from one stage to the next by use of an elevator. In order to progress, the player must locate an elevator key in each level.

WARIO LAND 2



Wario Land 2 introduced the “no death” system, whereby enemies are unable to hurt Wario. They might stun him or knock him back a bit, but they can’t send him out the level. This not only removes the need for the 1UP system prevalent in the Mario series (and *Wario Land*), but also offers an opportunity for some completely new gameplay.

Rather than using hats, Wario is instead transformed by enemy attacks. Depending on the type of damage he receives, Wario can be inflicted with numerous status effects. For instance, if he’s attacked by a fire-wielding enemy, he’ll catch on fire. As amusing as it is to watch Wario go through the different animations, many of the transformations also change Wario’s abilities and the way he controls. Thus, rather than simply bursting into flames for a few seconds and waiting for the fire to go out, being set ablaze gives Wario the ability to clear enemies and break certain blocks to gain access to new areas.

With each enemy likely presenting a new transformation and the environments being built around their use, there’s a strong interconnectivity between Wario, enemies, and the levels. Suddenly the game becomes more about figuring out when to allow Wario to be attacked *on purpose* so that the player can use the temporary abilities to progress through the levels. There are ten transformations in all.

Wario becomes Flat Wario when crushed by a heavy object. He moves slowly and can’t jump very high. However, he can cross gaps that his larger form cannot. Falling from a ledge sees Flat Wario float gently to the

ground. Wario returns to his normal bulbous self when he touches water or is attacked by an enemy that grabs his head and stretches him out.

Wario becomes Fat Wario after touching a slice of cake thrown over by chef-like enemies. Plumped from overeating, Fat Wario cannot move quickly, jump very high, or go through doors, but he can defeat enemies by walking into them, stun enemies by landing near them, and smash through blocks otherwise unbreakable with a standard butt stomp. To lose the weight, Wario has to walk it off. The player does have one defence against skyward edibles, ducking will cause the cake to fall past Wario, giving the player enough time to go after the enemy before they toss another slice.

Wario becomes Hot Wario after being attacked by a fire-based enemy. There are two phases to the transformation. In the first phase, Wario runs around wildly with his butt on fire. The player only controls his jump. They must get Wario to jump over water (which reverses the transformation) and bounce off walls in order to properly position him for the next phase. In the second phase, Wario becomes fully engulfed in flames, can destroy flame blocks, and the player regains control of his—now slower—movement. After a few seconds, the fire goes out, leaving Wario in ashes, which he promptly shakes off, returning to normal.

Wario becomes Crazy Wario when hit by balls tossed out by penguin-like enemies. In the Japanese version, the birds throw mugs of beer instead of balls, so Wario was in fact drunk in the original release. In his “crazy” state, Wario is difficult to control as he stumbles around. Pressing the B button causes him to belch...which can actually be used as a projectile attack. Taking damage or touching water sobers him up.

Wario becomes Zombie Wario when touched by a ghost or zombie. Zombie Wario moves very slowly, cannot jump, falls through thin platforms, and defeats enemies by touching them. Depending on the situation, falling through platforms is either a setback or a means of progression. Walking into the light reverts Wario back into his normal form.

Wario is apparently terribly allergic to bee stings as his face swells up and he becomes Puffy Wario when stung by a bee. Puffy Wario floats through the air, potentially accessing out-of-the-way platforms. Player control is limited to steering him left and right as he ascends upwards until he runs into a solid surface and his head deflates.

Wario becomes Bubble Wario, the underwater equivalent of Puffy Wario, when touching an air bubble underwater. Wario gets trapped inside the bubble and floats toward the surface. The bubbles can help him pass currents, i.e. progress, or return him to the surface, i.e. backtrack. The player

can steer Wario to the left and right as he ascends. The bubble pops once it reaches the surface or gets pressed up against a ceiling.

Wario becomes Tiny Wario when a wizard casts a spell on him. Technically, Tiny Wario is different from *Wario Land*'s Small Wario as Tiny Wario can't lose health. In this form, Wario can jump high and pass through small passages. Although his miniature size keeps him from being able to perform Wario's regular moves. Jumping into water or taking damage returns Tiny Wario to normal.

Wario becomes Bouncy Wario after being pounded by a hammer. In this form, Wario can jump very high, but cannot stop bouncing. This may cause uncontrolled ascent up numerous platforms or be used purposely to access higher areas. The transformation wears off on its own after a while.

Wario becomes Ice Skatin' Wario after touching a snowflake blown out by snowmen. As Ice Skatin' Wario, Wario's frozen into a rather stunned-looking statue and sent flying backwards until he crashes into a wall and breaks free. Snowflakes are large and hard to avoid. They're often used as traps to make Wario lose progress, by having him slide off of a high platform. However, they can also be used strategically to bypass enemies and access new areas. The player has no direct control over Wario while he's frozen.

In addition to the transformations, *Wario Land 2* introduces several new gameplay mechanics. For instance, when approaching a slope, Wario can slide (ROLL) down the hill. Rather than simply skidding to a stop, he rolls into a ball and continues moving forward, hitting enemies and breaking blocks. The player has no control over Wario's speed or trajectory during this time, but can still jump (ROLL JUMP) over obstacles and up through platforms. As long as Wario doesn't come into contact with a solid object, he'll continue rolling.

Wario can also use owls to fly freely around certain levels. By stunning an owl and grabbing its feet, it'll carry Wario through the air. By default, the owl moves in a straight line left or right. It will turn around and move in the opposite direction when it hits a solid object. The player is free to manoeuvre the bird in any of four directions by pressing the d-pad. When holding down on the d-pad though, the owl flies quicker, which can make it difficult to dodge objects.

Wario also has a move that few other platforming stars have: the ability to crouch jump. By crawling across the ground and jumping, Wario can jump up and squeeze into narrow passageways.

While the world map from the original *Wario Land* remains absent, there are still hidden areas to be found over the course of what initially appears to be

a level-to-level linear quest. For instance, the first level sees Wario asleep in bed while the Black Sugar Gang break into his castle (which he gained at the end of the first *Wario Land* game, according to one of several endings) and abscond with his treasures. At the start of this level, Wario's supposed to get out of bed and shut off his alarm clock. The player's free to simply let Wario remain asleep in bed. Wait long enough and the Black Sugar Gang return to the castle and carry Wario away, tossing him out in the woods. So, instead of starting the game from within the castle, the player travels through several levels set in the woods outside the castle.

In total, there are twenty-five hidden levels, which is equal to the number of standard levels. Upon completing the game, the player's presented with a map that shows all of the completed stages, treasures found, and branching routes into new sets of levels. Upon restarting the game, the player's free to choose any of the previously completed levels to track down the alternative exits. The branching routes lead to five secret endings. A special challenge level awaits players who manage to find the hidden treasures spread across all fifty stages.

As before, coins can be spent on mini-games. There are two mini-games, a picture matching game hidden in each level and a number matching game at the end of each level. In the picture matching game, eight cards are quickly shown before they're turned over and the player must choose which card matches the card at the top of the screen. In the number matching game, a 3 x 3 set of panels reveals part of a number. The player can have a guess at the full number or pay to flip over more panels for clues.

Coins can be found throughout the levels, with hidden caches tucked away in various corners. Taking damage causes Wario to drop coins, which is the game's primary form of punishment, since Wario can't be killed by enemies. The player can lose a bit of progress as Wario recoils when taking damage, but he usually isn't sent back very far, with the exception of boss battles. Each boss has an attack that causes Wario to transform, forcing his exit. For instance, getting stung by a bee causes him to float up out of the boss arena, leaving the player to backtrack and start the battle from scratch.

WARIO LAND 3



Wario Land 3 has twenty-five levels—though several of them are purely optional. Each level has four coloured keys and four corresponding treasure chests. Usually only one of the four chests is available at the one time. Finding the treasure in one level almost always upgrades one of Wario's moves, gives him a new ability, or opens up a new level or a new path in a previously-explored level. After getting a treasure, Wario is whisked out the level and left to chase up the aforementioned changes, presented to the player on the world map. This trek between different areas of different levels leads to a nonlinear adventure with a much greater emphasis on exploration, a change from the optional treasure chests in *Wario Land 2*.

Most of Wario's moves are abilities that he had in the previous games, although some can be further enhanced. An enhanced version of the butt stomp allows Wario to break through solid blocks and shake the ground to stun enemies. Swimming underwater has to be earned (without it, Wario merely flails his arms on the water's surface), however, the enhanced version allows him to swim against strong currents. An enhanced jump allows Wario to break solid blocks with his head and increase his jump height by pressing up and jumping. An enhanced body slam allows Wario to break solid blocks, charge through rows of cracked blocks, and roll through solid blocks.

The progression structure is similar to a Metroidvania game, with Wario starting out with relatively few abilities and slowly gaining more as he progresses, in turn opening up more of the game. Crippling Wario's moveset at the start of the game, removing many of his well-practiced abilities (such as swimming underwater, butt stomping, and picking up and throwing enemies), leaves him with only jump, body slam, duck, and crawl at the outset.

The game also introduces a day-night cycle where every level is affected by the cycle to some degree. Certain enemies only appear during certain times of the day or they may behave differently. Some daytime enemies may be sleeping when encountered at night, while the player may have to contend with creatures such as zombies that don't appear when the suns out.

As in *Wario Land 2*, Wario can use an owl to fly around the environment. However, since owls sleep during the day, Wario can only sneak up on them during the daylight cycle (they fly freely at night). Otherwise, awakened owls function in the same manner as they did previously.

Each level contains eight musical coins, which offer additional challenge for players attempting to 100 percent complete the game. That is, aside from collecting all one hundred treasures. Most of these coins cannot be reached until the proper power-ups have been acquired. The player can't just collect a few coins on each playthrough of the level either. They need to collect all eight coins in one shot. So, the player needs to make a dedicated "coin run" for each of the levels, and will generally have to wait until all of the permanent power-ups have been earned before making the attempt. The reward for the extra effort is additional golf-based mini-games.

Breaking blocks and defeating enemies often yields coins. Fortunately, Wario no longer loses coins when hit by enemies, as he did in *Wario Land 2*, so keeping money is all the easier. Yellow coins are worth 1 coin unit. All the other colours are worth 10. The reason why there are so many coloured coins—with no difference in value—is that the different coloured coins appear when Wario's in close proximity to the same coloured key. For example, if a red key is nearby, blocks broken in the key's vicinity drop red coins, offering players a clue as to the key's location.

Coins have no purpose other than to be spent on the golf mini-game. Mini-game blocks in each level prevent access to one of the treasure chests. The only way to clear the block is to enter a nearby mini-game room and play a round of golf. In other words, the existence of these mini-games is a contrivance. None of Wario's earned skills are required to remove these blocks, and their presence isn't explained within the story.

Wario Land 3 takes the "no death" design a bit further, adding new transformations and methods of being stunned, while tweaking the existing set. For instance, one enemy latches onto Wario's face and blinds him, turning the screen dark until he runs into a wall and flings it off. There are also robots that slice Wario in half with their lasers. Wario magically rebuilds himself shortly after. As before though, most standard enemies simply shock Wario for a moment and push him backward, potentially causing him to lose progress.

The bulk of Wario's transformations carried over into *Wario Land 3*, with some undergoing minor modifications. A few new transformations are also added to the mix. Flat Wario, Bubble Wario, Fat Wario, Puffy Wario, Hot Wario, and Ice Skatin' Wario function the same as in *Wario Land 2*, although new enemies initiate the transformations. For example, flame spouts, fire-spewing robots, pits of fire, and even an ill-tempered sun transform Wario into Hot Wario, while frog-like enemies that throw apples and hide in the walls transform Wario into Fat Wario. The tweaks to the existing transformations are as mentioned below:

Crazy Wario has been replaced with Dizzy Wario, and is identical except for the lack of projectile attack.

Zombie Wario can now jump, when in *Wario Land 2*, he couldn't.

Bouncy Wario's manual jump height is greatly increased. He can even bounce off of enemies' heads for an extra boost in height. When Wario returns to his normal form, rather than reverting on the spot, he flips over and bounces to the side. So, if Bouncy Wario was standing on the edge of a platform, he could find himself being flung off.

Tiny Wario doesn't make an appearance in *Wario Land 3*, but several entirely new forms are introduced. They are:

- » Wario becomes Ball o' String Wario after touching the silk of a silkworm. Ball o' String Wario rolls around, bouncing off walls, similar to Hot Wario's first phase, except that the player has no control over him at all. Wario clears all enemies that he runs into, and can destroy special yarn blocks. The transformation wears off on its own after five wall touches.
- » Wario becomes Invisible Wario after touching the potions thrown out by a mad scientist. Invisible Wario can pass through certain gates which have eyeballs above them. If Wario's seen by the eyeball, the gate will close when he gets near it, but if he's invisible, he can pass through unfettered. The player must choose the path to the eye-doors carefully, however, as passing through a pipe removes Wario's invisibility. Since the player cannot see Wario onscreen, it's possible that they may allow him to get afflicted with another status effect, which will also remove his invisibility. The player can check the ground for puffs of dust when Wario jumps or dashes, which helps in determining his location. Further, every few seconds Wario flickers into existence, allowing the player to get a lock on his position. It's also important to note that Wario cannot open treasure chests

while invisible, so he'll need to turn back to normal before he can complete the level.

- » Wario becomes Vampire Wario after touching a group of bats. At first, the transformation seems useless as Vampire Wario can only move to the left and right and jump. He cannot climb ladders, perform special attacks, or suck the blood of his victims, however, by pressing the B button, Wario transforms into a bat.
- » As a bat, Wario has free, albeit somewhat erratic, flight. Instead of holding the A button to ascend or rapidly pressing it Joust-style, the player must press, hold, release, and repeat. In practice, this means Vampire Wario ascends somewhat awkwardly, but it fits with the animal's characteristics. The player needs to use Vampire Wario's erratic flight to navigate around beams of light and avoid pools of water and water drops, things that return Vampire Wario back to normal.
- » Wario becomes Snowman Wario when hit by clumps of snow. Snowman Wario and Fat Wario have similar forms of movement, a slow waddle with tremors when Wario lands a jump. When Snowman Wario reaches a slope, he automatically rolls down it, turning into a snowball. The further he rolls, the bigger the snowball becomes. The snow blocks that Snowman Wario can break are dependent on his size. Unlike Wario's standard roll, Snowman Wario can't jump while rolling.

Given the organisation of levels, the lack of a coin/1UP system to keep the player collecting, and the loss of progress being the key form of punishment, *Wario Land 3*'s focus is shifted heavily toward exploration. The pace is slowed, and the solutions for progressing from one area to the next are more difficult, particularly as the player pursues some of the hard-to-reach, optional treasures. The more complex puzzles require Wario change forms multiple times or change forms to get to another area before the transformation wears off. This all requires a bit of consideration as to how the transformations play off the level design. Failure leads to mild backtracking and repetition. The player is generally free to repeat the puzzle arrangements as many times as it takes to understand and overcome them.

WARIO LIVES ON!

While many of Wario's basic mechanics and gameplay elements were established during the first several *Wario Land* games, the series has continued to iterate on its own formula. For instance, *Wario Land 4* replaced the "no death" system with a life bar and a more straightforward action-oriented approach to the overall design. The pace increased with timed boss

encounters and challenges that require the player to move quickly through previously-explored environments, both of which are not seen in any of the other games in the series.

Wario Land 4 still features a certain degree of non-linearity with an overworld map that allows the player to choose between groups of levels, with each group to be completed in a set order. This brings the game closer to the structure of *Wario Land 2*, and is quite different from the wide open design of *Wario Land 3*, which required that players gain new abilities, alter level layouts, and backtrack into previous areas in order to progress.

Many of the third party games in the Wario-verse have been selective about emphasising Wario's established mechanics. Treasure's *Wario World* had a strong focus on Wario's "hands-on" approach to combat, with a variety of wrestling-style moves, but no transformations whatsoever. Suzak's *Wario Land* spin-off *Wario: Master of Disguise* was designed around Wario's transformations, giving the player the ability to transform at will, provided they have the necessary power-ups. Good-Feel's *Wario Land: The Shake Dimension* reduced the focus on transformations, eliminating all but a few, while greatly emphasising *Wario Land 4*'s folded level designs with its extended escape sequences.

While it's perhaps easier to answer the question "*What is a Mario game?*" as opposed to "*What is a Wario game?*", time has shown that it's more important that the gameplay be reflective of the character. Wario is destructive, greedy, and entirely self-centred, and the gameplay in his games sees him crushing blocks, destroying enemies, and seeking treasure at any cost.

Wario's very name comes from a combination of "Mario" and the Japanese word "warui", which translates to "wrong". Thus, Wario's name literally means "Mario gone wrong" (just as Waluigi is "Luigi gone wrong"), which suggests that Wario isn't evil as so much as what Mario would become if he let money and power go to his head, and lots of pasta go to his belly.

While Wario's future—and that of the *Wario Land* series—is as of yet uncharted, Wario's character continues to make itself known through his many appearances in the Mario sports, *Mario Party*, and *Smash Bros.* series. Wario has more than enough character to see himself in a starring role once again, in whatever gameplay that role may bring.

**FROM 8 TO 16 BITS IN
A YEAR AND A HALF –
WARIO LAND 3 TO 4**

FROM 8 TO 16 BITS IN A YEAR AND A HALF – WARIO LAND 3 TO 4

It took R&D1's Game Boy team a year and a half to make *Wario Land 4* after finishing *Wario Land 3*, the shortest turnaround in the series, despite the transition to a new console. *Wario Land 3* and *4* are also the two most dissimilar games in the series. So what changes were made to *Wario Land 3* to bang out a new instalment on a new platform in just a year and 6 months? To answer this question, I've highlighted six key areas of difference. Since we already have a deep understanding of *Wario Land 4*, this section will focus on *Wario Land 3* so as to create a point of contrast which we can then examine in the conclusion.

GAME STRUCTURE

Wario Land 3 has twenty-five levels on a world map broken into north, south, east, and west segments. Each level has four coloured keys and chests. The first time Wario enters a level, he can usually only reach the silver key and chest. Inside each chest is a treasure. Some treasures are tools which open up new levels or modify existing ones, some grant new abilities, while others are just ordinary treasures.

After Wario finds a treasure, he exits the level and the new stage(s) or stage(s) with newly active routes are revealed in a short cutscene¹. The notification gives the player the direction they need to press on. The time then changes from day to night, or vice versa. Besides a shift in visual tone, the presence of enemies, their behaviour, and access to certain areas are determined by the time of day.

The player follows the trail until they've collected all the music boxes (key treasures) they need to reach the end boss. A good number of the game's one hundred treasures are optional, so the player's free to continue playing even after they've unlocked the boss. In order to claim all the treasures, the player must tackle each level four times (once for each of the four coloured chests), exploring a different route every time.

1 This is a bit of a sticky point, so I just want to clarify. These areas become available because either the treasure allows Wario to reach a level that he couldn't access before, alters a pre-existing level (ala *Wario Land*), or the new ability allows Wario to reach a previously inaccessible part of a pre-existing level (ala *Metroid*). That is to say, the treasures control progression by modifying one of three things: the world map, level(s), or Wario's mechanics.

There are three components to *Wario Land 3*'s particular brand of exploration. Firstly, the player needs to keep track of which level(s) they need to go to next. Secondly, when presented with several stages, the player can choose which order to play them in. Thirdly, every time the player returns to a level, they need to find a different way through it.

Although the player has the freedom to explore and the shorter routes are great for portable play, the centralised level design (most levels are orientated around hubs) and lack of hard punishments (Wario can't lose health) forgo game ideas and restricted-to-freer practice. As such, each route is made up of several unrelated arrangements, and backtracking, as the core punishment, grows tiresome.

After completing the game, a time attack mode, where the player is timed on how fast they can nab the four keys and leave through one of the exits, opens up.

MECHANICS



Wario doesn't begin with all of his regular abilities. At the start of *Wario Land 3*, he can only walk, jump, attack, crouch, climb ladders, slide down ladders, roll, roll jump, and float in water.

Wario's other moves are unlocked through treasures. These include smash attack, super smash attack, swimming, throw, a higher jump/stomp jump, the ability to swim past currents, throw heavy enemies, and break blocks from underneath. After Wario regains all of his mechanics, his move set is similar to what he has in *Wario Land 4*, aside from the following exceptions:

- » There's no DASH ATTACK or HEIGHTENED SMASH ATTACK.
- » Wario appears to move faster in *Wario Land 3* because the screen resolution is lower and thus the camera must constantly move to keep up with him. This impression fits well with his walking animation, where he takes large strides and his hat and hands bounce perkily as he walks. By comparison, in *Wario Land 4*, the camera moves relatively little and Wario walks with his hands pumping back and forth, accentuating his roundness.
- » The jump upgrade doesn't add height to Wario's jump, but adds a higher jump mechanic, executed by the player holding the up arm of the d-pad as Wario jumps. When jumping forward, Wario's horizontal movement slows as he reaches the apex of the jump.

- » Only after a full jump or falling from a significant height will Wario make a sound on landing. His short jumps are silent.
- » Wario's crouch jump is almost as tall as his regular jump and covers roughly the same horizontal distance when jumping forward. Crouch walking is slower though.
- » Wario's roll jump is higher than *Wario Land 4*'s.
- » With the swimming upgrade, Wario can swim against currents, not just resist them.
- » After sliding down a ladder, Wario quakes the ground.

Mechanics aside, Wario recoils further, remains in the recoiling state longer, and doesn't drop spoils. There's also less glow and fewer sparks around Wario when he charges a throw or breaks a block, making him feel more ordinary in *Wario Land 3*.

TRANSFORMATIONS



Transformations were originally introduced in *Wario Land 2* as part of the game-over-free design. Instead of taking damage, enemy attacks change Wario into different forms. *Wario Land 3* frames transformations in the same light, as special reactions to enemy attacks. Under this interpretation, there are sixteen transformations. In terms of unique methods of navigation, there are thirteen transformations. Ten of the thirteen are in *Wario Land 4*, but slightly altered.

- » Hot (Flaming) Wario follows a timer, not the three touch rule.
- » Bouncy Wario hops higher, but the spring jump is only slightly higher than the hops. The transformation is more about the constant hops than lining up a jump.
- » Vampire Bat Wario is renamed Vampire Wario as Wario first transforms into a vampire, which can then transform into a bat. The additional state is superfluous as the vampire has no redeeming qualities and is rarely, if ever, called upon in the arrangements. Because of the lower screen resolution, the camera constantly shakes when controlling the vampire bat.

- » Snowball Wario snowballs and can only break some snow blocks when at a certain size. This is the same as *Wario Land 4*, but the slopes are always far enough from the snow blocks for size to never be a concern.
- » Puffy Wario can't be nudged upwards.

Wario can transform when already transformed.

The three transformations that were cut for *Wario Land 4* are Crazy, Invisible, and Ball o' String Wario. Crazy Wario stumbles around uncontrollably after birds zip past Wario, making him dizzy. Water returns him to normal. Invisible Wario can bypass certain gates. Passing through a pipe, though, ends the transformation. Although Wario's invisible, occasional flickering and the dirt kicked up when he lands help the player track his position. Ball o' String Wario is similar to Frozen Wario, except that Wario bounces off walls. After five bounces, Ball o' String Wario reverts back to normal.

ENEMIES



Wario Land 3 has more than thirty enemies, most of which have equivalents in *Wario Land 4*. There are fewer enemies as only two overlap functionally, unlike the Spearmen variants in *Wario Land 4*. The enemies don't drop spoils or break blocks when thrown at them (there is one exception to the latter, keep reading). Of the enemies which are similar to those in *Wario Land 4*, here are some of the differences:

- » There are two enemies which convert Wario into Fat Wario. One on the ground (Doughnuteer) and one in the walls, usually placed around ladders (Appleby). In *Wario Land 4*, the Ringosukis are placed on platforms near ladders so that they double as Applebys.
- » Crushing (Squasher) and stretching (Grab-bot) enemies replace the crushers and decompressing machines.
- » Silky, the Imomushi variant, can also shoot silk, turning Wario into Ball o' String Wario.
- » Hammer-bots are similar to Menhammer, but can't jump.

The other enemies are either wholly original or more or less identical to their *Wario Land 4* counterparts.

LEVEL ELEMENTS

BLOCKS

There are fewer blocks, but more block types. The additional types include mini-game blocks, Fat Wario blocks, Ball o' String Wario blocks, and blocks which only break when an enemy is thrown into them. Blocks are the only game elements that drop spoils.

COINS

Coins come in three varieties: normal, coloured, and musical. Normal coins are worth 1 coin unit each and fall from broken blocks. Silver, red, blue, and green coins are worth 10 coin units each and fall from broken blocks when Wario's near the respectively coloured key or chest. Each level has eight musical coins that must be collected in the one go. Obtaining all the musical coins opens up more courses in the golf mini-game. Wario can hold a maximum of 999 coin units.

OTHER LEVEL ELEMENTS

- » Drops of water are used as obstacles against Vampire Wario.
- » Barrels replace glass balls and are present in the level arrangements.
- » The steel oven, a portable platform that can be knocked around with the attack mechanic, returns from *Wario Land 2*.
- » Zip lines that Wario hangs from, jumps between, and rolls off didn't carry into *Wario Land 4*, which is surprising given the game's focus on navigation.
- » Switch blocks can freeze water.

MINI-GAMES



Wario Land 3's mini-game of choice is a Wario-themed variant of golf. Similar to fully-developed golf games like *Mario Golf*, the mini-game uses a meter

system. The player presses the A button to kick-start an icon moving from the left to the right of the meter. The further the icon is to the right when the player presses the A button again, the longer the shot (power). After the icon bounces back to the left, the player needs to press the A button when it's between the blue bars to land a successful shot (accuracy). The closer to the centre, the closer the ball lands to its projected destination.

The golf course is presented in a familiar side-scrolling perspective, with a Para-Goom enemy as the golf ball and Wario's attack mechanic as the swing. The farthest point Wario can swing to is represented by a glowing Para-Goom outline which the player can use as a visual guide to determine the length of their shot. Each course may be littered with bushes, bunkers, pools of water, or pits of lava. These elements force the player to engage with the swing mechanic, instead of just going for the longest shot. The holes range from par 3 to par 5.

The golf mini-game is mandatory. Mini-game blocks prevent the player from reaching some chests, so Wario needs to enter a nearby door marked with the mini-game logo and complete a hole of golf to remove the block. Playing the mini-games costs coins, with the price rising the more treasures Wario collects.

Once the player has collected all one hundred treasures, the mini-game becomes available on the world map. Collect all eight musical coins per stage and a final set of courses are added to the collection.

CONCLUSION

The defining difference between *Wario Land 3* and *4* is the progression system and structure of the levels. *Wario Land 3* is more of a Metroidvania game as Wario is stripped of his abilities and must pursue a string of treasures to reclaim them and eventually beat the game. This involves repeating levels (i.e. areas of the castle/sectors) several times over to discover alternative routes which are gradually unlocked with new treasures and mechanics. The player also needs to consider where the next treasure is and whether it's day or night before they enter a level. *Wario Land 4*, on the other hand, is much more straightforward. The player only needs to complete each level once and move on.

Since *Wario Land 3*'s levels must accommodate four separate routes (leading to the different coloured keys and chests) and these routes often overlap with hubs and offshoots, the stages are made up of clusters of arrangements with little consistency and no unifying idea behind them aside from a visual theme. Since *Wario Land 4*'s levels only have the one linear

route, the designers can focus on making that single path as engaging as possible with game ideas that build from room to room through restricted-to-freer practice and folded level design.

Without hard punishments, *Wario Land 3* exerts less authority over the player. They therefore never feel at risk, only constantly inconvenienced. Substituting hard punishments with more soft punishments only draws out gameplay, making the experience grow tiresome. In *Wario Land 4*, the hard punishments help coerce the player into education and engagement.

Wario Land 3's transformations each have their own function, whether that be to provide a new means of navigation, act as an obstruction, or just offer a fancy reaction to an enemy attack. *Wario Land 4* streamlines the transformations by focusing them on navigation and using their placement in the level to determine their role as an aid or an obstruction. The different resolutions of the Game Boy Color and Game Boy Advance's screens dictate the type of gameplay possible in both games. With a lower resolution and less visual leeway, *Wario Land 3* focuses on exploration and puzzle solving. With a higher resolution and more visual leeway, *Wario Land 4* focuses on navigation and movement under the pressure of a timer. *Wario Land 3* is a puzzle/exploration platformer, while *Wario Land 4* is an action platformer. It wouldn't make sense for *Wario Land 3* to be about movement when the player can't see very far in front of Wario. Vampire Wario is proof enough of that. Thus, the game concentrates on what works best within its limited resolution, puzzles. This also explains the addition of DASH ATTACK in *Wario Land 4*. With more visual room, the game can afford such a mechanic.

In *Wario Land 3*, the mini-games are mandatory, while in *Wario Land 4*, they're optional. Other voluntary extras (such as puzzle rooms, music CDs, and musical coins) have a lower barrier to entry in *Wario Land 4*.

It wouldn't be a stretch to assume that *Wario Land 3*'s time attack mode led to *Wario Land 4*'s timer-based folded level design.

The key and chest level system, withdrawn mechanics, soft punishments, lower resolution of the Game Boy Color's screen, and lack of timers and DASH ATTACK make *Wario Land 3* a slower-paced platformer with a heavy focus on exploration and progression management. This is in contrast to the ideas-centric action platforming of *Wario Land 4*.

FROM ODD TO OFF-KILTER – THE TRANSITION INTO WARIOWARE

FROM ODD TO OFF-KILTER – THE TRANSITION INTO WARIOWARE



Following *Wario Land 4*, the *Wario Land* series went on a 7-year hiatus while spin-off series *WarioWare, Inc.* took over the reigns and drove the games in a brand new direction. In *WarioWare*, the player tackles a randomised selection of 4-second “microgames” at an ever-increasing, rapid-fire pace.

WarioWare invented a new sub-genre and thus developed a cult following, but it wasn't just the series' innovation that led to its popularity. Although prior *Wario Land* games have a quirky streak to them, *WarioWare* took this aspect and turned it into a defining characteristic, with microgames themed around actions like picking noses, swatting flies, and putting a cat to sleep. *Wario Land 4*, as the last and weirdest game in the series before the first *WarioWare* game, *WarioWare, Inc.: Minigame Mania*, led the way for this stylistic transition into the obscure. Below are several examples of *Wario Land 4*'s quirkiness which, in part, brought about the character's reinvention in *WarioWare, Inc.: Minigame Mania*. If you've played any of the *WarioWare* games, some of these examples will sound familiar.

THE WARIO HOP MINI-GAME

Wario rides a rolling tyre through the desert while jumping over flashing pigs, midget cacti, sexy female cacti, Dr. Arewo Stein, samurais bouncing on horses, and rocks with arms reaching out to grab him. Each jump is punctuated with sounds of dogs barking, chipmunks squealing, people exerting themselves in unusual ways, and voice samples like “work it”, “bring it”, and, the very classy, “aww yeah!”.

WARIO ROULETTE MINI-GAME

The player needs to replicate a given face by matching the facial features of clowns, Wario, grandpas, grandmas, anime characters, and middle-age men. The results often lead to abominable creations of ugliness.

WARIO'S LAST KISS

In the worst ending, Princess Shokora transforms into what is effectively Wario in a dress and then kisses Wario.

DR. AREWO STEIN AS A PROP

This ceaselessly resourceful, seemingly invincible old man is exploited as a prop throughout the many puzzle rooms. You can throw him into fire, water, blocks, and switches, all the while he lets out a signature Michael Jackson-esque yelp.

ENEMIES' DYING ANIMATIONS

When defeated, most enemies fly off-screen with a stupid expression on their face.

THE BOSSES ARE FREAKS

Spoiled Rotten: An anthropomorphic eggplant that carries around a doll and has a short temper.

Cractus: A flying plant that drools slime and has razor leaf hands.

Cuckoo Condor: A crippled condor that resides in a giant clock and lays an endless supply of eggs, some of which hatch explosive chicks.

Aerodent: A hostile mouse that sits on top of an inflatable teddy bear.

Catbat: A part-cat, part-bat hybrid creature with a bat's head as its crown. It coughs up poisonous enemies.

FREE SMILE IN THE ITEM SHOP

The Game & Watch character in the Item Shop blows kisses and waves when you claim your free smile.

SOUND ROOM

The sound room is all colours of madness. The sixteen music tracks run the gamut from dogs barking to sheep baaing, goats bleating, people snoring, frogs croaking in the rain, the clanking of tubes, and spraying of steam.

A video plays along with the music: a warped mix of digitised sprites of people in Wario clothes, dogs twitching their heads, the Game & Watch guy operating a turntable, and apples with bites taken out of them. None of it makes any sense.

THE CUTTING ROOM FLOOR—BETA VS. FINAL GAME

THE CUTTING ROOM FLOOR—BETA VS. FINAL GAME



When a video game is near completion, it enters the beta phase of production. This is where the last few bugs are squashed and the final touches are applied. In beta form, the game is usually demoed to the press to create pre-release anticipation. By comparing the media put out when *Wario Land 4* was in beta to the finished game, we can deduce what changes took place over the last leg of development. The screenshots featured here are from E3 2001, several months before the game's release in November. You can tell that they're legit from Nintendo's watermarks.

HEARTS AND GARLIC

In the beta version, a clove of garlic replaced the heart next to the heart gauge, suggesting that Wario may have originally collected garlic instead of small hearts, ala *Wario Land*. The gauge is also considerably shorter and not segmented into eight parts. The bar fills green and is present in boss battles, whereas it fills red and is absent from boss battles in the finished game.

BOSS HEALTH BARS

In the final game, the bosses' health bar changes colour depending on how much health they have left (form fits function). In the beta, the sections which determine the bar's overall colour in the final game are themselves painted the respective colour.

HOTEL HORROR LAMPS

In the beta version of Hotel Horror, the lamps don't have faces like they do in the final version.

SPOILED ROTTEN

In the beta version of the Spoiled Rotten boss battle, there's no kitchen, TV, or GameCubes in the background.

MAYU BIRDS

The Mayu Birds have four fangs in the beta version, but only two in the final game.

CRACTUS

As we can see by the screenshot of the beta version, the firefly appears while Cractus is still asleep. In the final game, it only shows up after Wario touches Cractus's drool and transforms into Zombie Wario. There's also no timer in the screenshot, which suggests that either boss battles didn't originally have them or Cractus's timer didn't start until the vase was broken. Despite the overlay of vines at the top, there are no CLIMBABLE vines in view.

WARIO: A PERSONALITY PROFILE

WARIO: A PERSONALITY PROFILE

Wario's personality is primarily defined by his interactions. The game designers determine what interactions Wario can and can't make, the specific details of those interactions, and the game elements that can be interacted with, so the player can only explore Wario's character within the personality space the designers have given them. If we are to understand who Wario is—or rather, who he can be—then we need to look closely at this “*personality space*” and make inferences.

Wario is Greedy: Blocks and enemies drop spoils, creating a psychological pull which coerces the player to collect each and every fallen heart and coin. The psychological pull is representative of Wario's own insatiable greed.

Wario Prefers Aggression over Pacifism: ATTACK and DASH ATTACK are the two most resourceful mechanics. This makes aggressive interactions preferable to passive ones.

Wario is Lazy: Despite having the strength to flatten enemies and break thick blocks, Wario can't run. This can be interpreted as laziness.

Wario Understands His Own Strengths and Weaknesses: Wario may not be able to run, but he can DASH ATTACK, which is more or less equivalent to running. By using his strength, Wario addresses a weakness, showing that he understands his assets and how best to use them.

Wario is Impatient: After sitting around for a minute, Wario enters his idle animation where he'll either jump rope or lift dumbbells, telling the player that he doesn't like to waste time. Wario's efficiency at SLIDING DOWN ladders is further proof of his hastiness.

Wario Can Commit to Long-term Goals: The quest to defeat the Golden Diva and claim the Golden Pyramid's treasure is proof enough of Wario's commitment. Spoils also encourage the player to take short-term actions for long-term gain.

Wario Can Cope Well Under Pressure: Wario has no choice, but to work fast under the post-fold timer.

Wario is Resourceful: Wario can use enemies and projectiles to jump higher, break blocks, and defeat other enemies.

Wario Doesn't Treat Others with Respect: Wario can PICK UP enemies and the prof and use them for his own ends. The projectiles appear distressed as Wario holds them above his head. He also knocks small enemies just by walking into them and can easily send them to a watery death.

Wario Doesn't Like Embarrassment: Every time Wario transforms, he exclaims "*oh, no!*" in resistance to his humiliating new caricature.

Wario can Multi-task: Wario can do two actions at the same time, such as holding an enemy and JUMPING.

MARIO AND WARIO – A CHARACTER COMPARISON

MARIO AND WARIO – A CHARACTER COMPARISON



Wario is a product of the Super Mario phenomena. Influenced by R&D1's subversive approach to design, Wario was created as an inverse of Mario's character. Where Mario is an altruistic hero, Wario is a greedy villain. From the flipped "M" to mechanics and momentum, their opposing personalities are established both through context and through play. In order to understand what changes R&D1 made to Mario to create Wario, I've catalogued an extensive list of the differences below.

CONTEXTUAL

APPEARANCE

Mario's clothes are primary-coloured. Wario's are secondary. Mario's moustache is curvy. Wario's is a zigzag. Mario's nose is a perfect, white oval. Wario's is a bumpy, pink wart. Mario's gloves are plain. Wario's have a "W" print. Mario's ears are curved. Wario's are pointy. Wario has an alternate costume that he wears in the *WarioWare* series. Mario sticks to tried-and-true red and blue. Apart from their Italian heritage, portly physique, hat, and overalls, which group the pair in the same character mould, Mario and Wario are visual opposites.

NARRATIVE

Mario pursues altruism, saving captive princesses, dinosaurs, the Mushroom Kingdom, and even the universe. Wario pursues greed, hunting for treasure to increase his wealth. As a result of meeting their goals, both characters often succeed in the other's too, to great irony. By saving Princess Peach, Mario amasses a bounty of coins. By finding more treasure, Wario indirectly helps others, such as Princess Shokora or the inhabitants of the music box in *Wario Land 3*.

In *Wario Land 4*'s instruction booklet, Wario's secret diary reveals that the antihero characteristically rejected altruism for greed by deciding to go to the Golden Pyramid on the basis of finding more treasure, not to save Princess Shokora. At the end of the game, if the player didn't collect enough treasures, Princess Shokora will transform into an ugly baby or a cross-dressing clone of Wario and kiss Wario. This is a parody of the Mario games, where Mario is rewarded for his good intent with a kiss from a beautiful princess.

At the end of *Wario Land: Super Mario Land 3*, Mario takes the golden princess statue from Wario, whisking it away in his helicopter. This is perhaps the only example of Mario going against his do-gooder nature, much to Wario's embarrassment.

In *Super Mario Land 2: 6 Golden Coins*, Mario defeats Wario in battle. Wario has never been able to beat Mario. Both characters have semi-regular villains (Bowser and Captain Syrup) who steal from them, forming the narrative basis of each game.

GAMEPLAY

MOVEMENT

Mario can accelerate into a run. Wario's walk remains at a constant speed. He can instantly switch to a faster speed through the attack mechanics, but this process lacks the playfulness of true acceleration and momentum, the nuances that make controlling Mario so engaging. Wario's momentum is restricted to CROUCH SLIDING and the DASH ATTACK, while his movement speeds are determined by mechanics (slow: CROUCH WALK, medium: WALK, fast: ATTACK, DASH ATTACK, and ROLL). Symbolic of either character, Mario's movement is unified, dynamic, and, thus, inherently engrossing, where Wario's is fractured, static, and, thus, not so engaging. Wario's movement is also indicative of his larger size.

JUMPING

The height of both characters' default jump is determined by the duration of the button press, giving the player a natural sense of control. Mario only has one main horizontal movement mechanic (walk/run), while Wario has several (WALK, ATTACK, DASH ATTACK, ROLL, and CROUCH WALK). Since jumping forward is dependent on horizontal movement, Wario's forward jumps splinter across the five horizontal movement mechanics. So, as Wario, the player has multiple not-so-dynamic jump mechanics. Yet, as Mario, the player has one jump mechanic with a lot of nuance from Mario's running momentum.

ATTACKING

Jump doubles as Mario's attack. Wario has a repertoire of attack mechanics which play to his aggressive personality, allowing him to ram, flatten, plough through, pick up, and throw enemies. The mechanics reveal the contempt Wario has for his enemies. Mario's jump, on the contrary, is detached from aggression. The anger is diluted by the multifunctional nature of the mechanic, of which navigation is the primary function and attacking is the secondary function, and the fancifulness of jumping on an enemy's head as an attack.

MECHANICAL COMPOSITION

The prior three paragraphs allude to a fundamental difference between the two characters. Mario is focused on movement and simplicity. So his navigation mechanics are naturally engaging and multifunctional. This makes Mario playful, inoffensive, and easy-to-control. Wario is focused on attacking. So he has a variety of attack mechanics, two of which—thanks to their multifunctional nature, fast movement speed, and Wario's lack of acceleration—come to dominate all areas of gameplay. This makes Wario binary, more complicated, and less organic.

POWER-UPS AND TRANSFORMATIONS

In the Mario games, power-ups hidden in blocks grant Mario new abilities and more health. With the exception of Starman, Mario retains a power-up until he gets hit by an enemy. Holding onto a power-up as long as possible offers an extra layer of challenge, and so long as the player has enough skill, they can keep the reward with them for the entire game. In games like *Super Mario Bros. 3* and *New Super Mario Bros.*, excess power-ups are stored in an item bank and the player can obtain power-ups by doing various things on the world map.

In the Wario games, transformations change Wario's form and mechanics for nearby puzzle/navigation arrangements. Specific enemies and hazards attack, flatten, fatten, stretch, and zombify Wario in humorous ways.

Transformations are limited by either use, time, movement, or area of reach so that it's hard for the player to continue using them outside of the closest arrangement.

Mario takes advantage of power-ups. They empower him, making him look like a hero and encouraging the player to be that hero by maintaining the upgrade for as long as possible. Transformations are inflicted upon Wario. They disempower him, turning him into a comical caricature and replacing his core abilities with new mechanics and properties relevant to the task at hand.

SWIMMING

In water, Mario sinks, while Wario floats. Mario's paddle sends him upwards, holding left or right on the d-pad pushes him in either direction. Vertical ascent is fast. Horizontal movement and vertical descent is slow. This imbalance as well as the alternate inputs (pressing the buttons, holding the d-pad) gives the player interesting constraints to work around, which makes swimming engaging. Mario's movements underwater generally follow the shape of a sine wave.

Wario has a comparatively sophisticated set of swimming mechanics. The d-pad allows him to SWIM SLOWLY in any direction, while UPWARD STROKE and FORWARD STROKE offer faster movement along each axis and double as attacks. To balance out the extra control the player has over Wario, the waterways tend to squeeze more enemies within a tighter space. This leads to more confrontations, further defining Wario as a brute.

The sinking dynamic and the artificial constraints on Mario's swimming mechanics help retain the playfulness of his movement above ground. Wario's swimming mechanics, like his land mechanics, are all about power and choice.

ROLLING

When Mario slides down a slope, he's only sent a short distance from its base. Wario, on the other hand, ROLLS off the incline, clearing any enemies or blocks in his path until he hits a wall. Players can use Mario's slide to build momentum for jumps. Wario's sets up tests of reflex skills. Mario's roll reaffirms his playfulness and Wario's his aggressiveness.

CONCLUSION

Mario and Wario were cut from the same cloth. Where they diverge though, they are defined. Mario's clothes are primary-coloured. Wario's are secondary. Mario pursues altruism. Wario pursues greed. Mario's mechanics encourage the player to engage with gravity, acceleration, and momentum. Wario's give them a variety of ways to defeat enemies and solve puzzles. Mario takes advantage of power-ups, while Wario is inflicted with transformations.

Using Mario as a template, Wario was created by inverting his appearance and backstory, adding attack mechanics, and removing the nuances of movement. This formed Wario as he was in *Super Mario Land 3: Wario Land*. In *Wario Land 2* and *3*, transformations fleshed out the self-deprecating aspect of his personality. *Wario Land 4* added to the continual adjustments before the character was given a partial reboot in the *WarioWare* series.

LOOSE ENDS

LOOSE ENDS

While most sections of the book cover several pages, there are some nuggets of insight which I can't work into anything longer than a sentence or paragraph. They belong here, in the loose ends.

GAME SPEED AND GRAPHIC SIZE



Good side-scrolling platformer design dictates that the size of the graphics (relative to the screen size) should be inversely proportional to the movement speed of the avatar. Large, fast-moving graphics lead to limited visual leeway and unfair reaction windows, making it easy for the player to run into enemies or down pits (see: Game Gear *Sonic* titles). Small, slow-moving graphics lead to tedious gameplay. *Super Mario Land* and *Super Mario Land 2* are good examples of the right balance between game speed and graphic size on either end of the spectrum. The former runs at a fast pace with small sprites and the latter runs at a slower pace with larger sprites. Where the first three *Wario Land* games sit on the *Super Mario Land 2* side of the fence, *Wario Land 4* is closer to the middle, thanks to the increased resolution of the Game Boy Advance screen, which allows for both detailed sprites and a considerable game speed.

TECHNICAL EFFECTS

Wario Land 4 uses a range of technical effects, such as sprite scaling, rotating sprites, parallax scrolling, wave distillation (underwater and after Wario re-enters the vortex), and layered effects like snow and rain.

GAME ENGINE

Wario Land 4's game engine was modified and used for *Metroid Fusion*. Later, R&D1 modified *Metroid Fusion*'s engine for *Metroid: Zero Mission*.

PRINCESS SHOKORA'S NAME

"Shokora" in Japanese is an approximation of the French word "chocolat". So, the princess is named after chocolate.

PRINCESS SHOKORA CAT MOTIF

In the opening cutscene, we're introduced to a black cat which Wario nearly runs over. A newspaper with a front-page story on the Golden Pyramid blows onto the cat, which the feline then stops and reads. The cat is Princess Shokora. The photo of the princess in the article foreshadows the ending. The cat later waits for Wario at the Golden Pyramid and leads him down to the central hub. The princess makes a few minor appearances throughout the main game. When Wario enters a boss room corridor, the cat runs into the Item Shop. In the battle against the Golden Diva, the cat attacks the diva's mask and gets sucked inside. At the end of the game, the feline transforms into Princess Shokora. The black cat is used as a hint to suggest that there's more going on besides Wario's narrow pursuit of the treasure. After the credits, Wario almost runs over a white cat, but this time the newspaper reveals a sale at an all-you-can-eat steakhouse which we assume Wario is off to. The theme comes full circle.

PAL LOCALISATION

Like many games, *Wario Land 4*'s text was localised in America and not altered into British English for the PAL version.

LEVELS AS PAINTINGS CONCEIT

Each painting in the passages represents a level. Wario warps into the paintings to enter the levels. This conceit was likely inspired by *Super Mario 64*. It's also been used in other games too, like *Castlevania: Portrait of Ruin*.

WARIO GETS NO TREASURE IN THE END

On page 39 of the instruction booklet, it's revealed that after returning home from the Golden Pyramid, Wario discovers that the treasure chests are empty.

ACCELERATION IN DEFINING WARIO

If Wario had proper acceleration, and thus momentum, he'd effectively be Mario with added attack mechanics. So the lack of it helps distinguish the two characters. Furthermore, acceleration and momentum would only make movement more attractive and encourage the player to avoid enemy encounters. One of the reasons Wario can't move very fast is so that he must engage with the enemies.

CREDITS

CREDITS

To conclude the book, it's only appropriate that I acknowledge the work of Nintendo's R&D1 studio who developed *Wario Land 4*. Each staff member is credited with their name, title, a short summary of their work, and a list of their involvement in other Wario games. I don't provide summaries for the people credited under Special Thanks and some of the voice actors. In 2005, most of R&D1's staff transitioned into Nintendo SPD Group No.1.

HIROSHI YAMAUCHI

Executive Producer

Hiroshi Yamauchi was the third president of Nintendo Co., Ltd. He worked at Nintendo for over 50 years and is known for his stern business sense which helped transform the small-time card manufacturer into the electronics giant it is today. He passed away in September 2013.

- » Executive Producer on *Wario Woods* and *Wario Land 3*.

TAKEHIRO IZUSHI

Producer

Takehiro Izushi joined Nintendo in 1975, making the targets for the Kousenju Custom series of electronic light gun toys before later working on the Game & Watch. In 1996, he became the director of R&D1 after Gunpei Yokoi, creator of the Game Boy, resigned. He later oversaw Nintendo of Japan's Game Boy Advance software development.

- » Producer on *Wario Land 2*, *Wario Land 3*, *WarioWare, Inc.: Minigame Mania*, *Wario World*, and *WarioWare, Inc.: Mega Party Game\$!*.
- » Special Thanks on *Mario and Wario* and *Wario Land: Super Mario Land 3*.

HIROFUMI MATSUOKA

Director

Hirofumi Matsuoka was a game designer and director at R&D1. Although he worked on *Metroid*, *Kid Icarus*, and *Balloon Fight*, his first major involvement with game design was with *Super Mario Land*. He continued his work on the *Wario Land* and *WarioWare* series until he left Nintendo in 2005 to join Creatures Inc.

- » Director on *Virtual Boy Wario Land*.
- » Chief Director and Game designer on *WarioWare, Inc.: Minigame Mania*.
- » GBA Wario Team Member on *WarioWare, Inc.: Mega Party Game\$!*.
- » Special Thanks on *Wario Land 2* and *WarioWare Twisted!*.

YOSHIO SAKAMOTO

Adviser

Yoshio Sakamoto is a well-respected game designer and director, popular for his work on the *Metroid* and *WarioWare* series. He strives to create games which are unique, even within Nintendo, and credits the *WarioWare* series as one such example.

- » Producer on *WarioWare Touched!*, *WarioWare Smooth Moves*, and *WarioWare D.I.Y.*
- » Game Designer on *WarioWare Touched!* and *WarioWare Smooth Moves*.
- » Supervisor on *WarioWare, Inc.: Mega Party Game\$!*.
- » Adviser on *Wario World*.

KATSUYA YAMANO

Programmer

Katsuya Yamano has been a key programmer on the *Wario Land* series. He's also held various technical and advisory roles on the *Metroid* series.

- » Producer on *WarioWare Snapped!*.
- » Programmer on *Wario Land 2* and *Wario Land 3*.
- » Game Designer on *WarioWare Twisted!*, *WarioWare Touched!*, and *WarioWare Smooth Moves*.
- » Supervisor on *WarioWare Twisted!*, *WarioWare Touched!*, *WarioWare Smooth Moves*, and *WarioWare D.I.Y.*

YOSHINORI KATSUKI

Programmer

Yoshinori Katsuki has done programming work on many portable Nintendo games including *Tetris Attack*, *F-Zero: Maximum Velocity*, *Metroid Fusion*, and *Brain Age*.

- » Programmer on *Wario Land: Super Mario Land 3* and *Wario Land 3*.
- » Game Designer on *WarioWare Touched!*.

NOBUHIRO OZAKI

Programmer

Nobuhiro Ozaki has done programming work on the *Metroid* games, alongside the *Wario Land* and *WarioWare* franchises.

- » Programmer on *Wario Land 2*, *Wario Land 3*, and *WarioWare Touched!*.
- » Game Designer on *WarioWare Touched!*.
- » Special Thanks on *Wario Land: Mario Land 3* and *WarioWare Smooth Moves*.

KOHTA FUKUI

Programmer

Kohta Fukui has been at Nintendo since the late 80s. He's programmed for numerous R&D1 games and also worked on *Pokemon Red/Blue*.

- » Programmer on *Virtual Boy Wario Land* and *WarioWare, Inc.: Minigame Mania*.
- » Game Designer on *WarioWare, Inc.: Minigame Mania*.
- » GBA Wario Team on *WarioWare, Inc.: Mega Party Game\$!*.
- » Tester on *Wario Land: Super Mario Land 3*.
- » Special Thanks on *Wario Land 2*.

GORO ABE

Programmer

Wario Land 4 was Goro Abe's first game at Nintendo. After completing the project, he both created and coded the *WarioWare* series and has worked exclusively on the franchise ever since. In 2005, he was promoted to head of Software Planning & Development Department, Production Group No. 1.

- » Director on *WarioWare, Inc.: Mega Party Game\$!*, *WarioWare Twisted!*, *WarioWare Touched!*, *WarioWare Smooth Moves*, and *WarioWare D.I.Y.*
- » Game Designer on *WarioWare, Inc.: Minigame Mania*, *WarioWare Twisted!*, *WarioWare Touched!*, and *WarioWare Smooth Moves*.
- » Programmer on *WarioWare, Inc.: Minigame Mania*.
- » Game Contents on *WarioWare D.I.Y.*
- » Supervisor on *WarioWare Snapped!*.
- » Graphic designer on *WarioWare, Inc.: Minigame Mania*.

- » GBA Wario Team on *WarioWare, Inc.: Mega Party Game\$!*.

HIROJI KIYOTAKE

Character Designer

Hiroji Kiyotake both designed Wario's character and directed his first game, *Wario Land*, making him one of the key creators of Wario and the *Wario Land* series. Since *Wario Land 4*, Kiyotake has taken more of an advisory role on Wario's design. Kiyotake also designed *Metroid*'s Samus Aran.

- » Director on *Wario Land: Super Mario Land 3* and *Virtual Boy Wario Land*.
- » Designer on *Wario Land: Super Mario Land 3*, *Wario Blast: Featuring Bomberman!*, *Wario Land 2*, and *Wario Land 3*.
- » Wario's Original Design on *WarioWare* series.
- » Character Designer on *WarioWare D.I.Y.*
- » Supervisor on *Wario: Master of Disguise*.
- » Advisor on *Wario World*.

TOMOYOSHI YAMANE

Enemy Designer

Like Hiroji Kiyotake, Tomoyoshi Yamane was a long-time character designer for R&D1 who has more recently taken up advisory work. Yamane has supervised the character designs of Nintendo franchises developed outside of Nintendo Japan. This includes the *Metroid Prime* games by Retro Studios and *Mario Sports Mix* by Square-Enix.

- » Designer on *Virtual Boy Wario Land*.
- » Tester on *Wario Land: Super Mario Land 3*.
- » Special Thanks on *Wario Land 2*.

TAKEHIKO HOSOKAWA

Designer

Takehiko Hosokawa first joined R&D1's Game Boy division where he worked on object and environmental design. He was the lead director and designer of the *Wario Land* series, making him the other driving force behind the franchise. He later left the series to Hirofumi Matsuoka and moved onto directing different projects, like *Metroid Other M* with his mentor Yoshio Sakamoto.

- » Director on *Wario Land: Super Mario Land 3*, *Wario Land 2*, and *Wario Land 3*.
- » Graphic Designer on *Wario Land: Super Mario Land 3* and *Virtual Boy Wario Land*.
- » Game Designer on *WarioWare Touched!*.
- » Voice Actor on *WarioWare Touched!*.

MASANI UEDA

Designer

Masani Ueda worked as a designer on the *Wario Land* games leading up to *Wario Land 4*, except the original. He later worked on the *Metroid* games for the Game Boy Advance and *Brain Age* for the Nintendo DS.

- » Screen and Map Designer on *Wario Land 2*.
- » Designer on *Virtual Boy Wario Land*, *Wario Land 3*, and *WarioWare Touched!*.
- » Game Designer on *WarioWare Touched!*.

ISAO HIRANO

Designer

Isao Hirano was a designer for R&D1's Game Boy division, covering all the *Metroid* games for the Game Boy and Game Boy Advance as well as some of the *Wario Land* games.

- » Designer on *Wario Land 3*.
- » Programmer on *Wario Land: Super Mario Land 3*.
- » Special Thanks on *Wario Land 2*.

SHINYA SANO

Designer

Shinya Sano has been a designer on a variety of games. Most notably, he designed Samus Aran in *Metroid Fusion*. Later, he coordinated with close partners of Nintendo, Camelot Software Planning and Paon, to develop the *Mario Golf*, *Mario Tennis*, and *DK King of Swing* series.

- » Designer on *Wario Land 3*.
- » Special Thanks on *Wario Land 2*.

RYUICHI NAKADA

Graphic Designer

Ryuichi Nakada's first job at Nintendo was to support production of the Virtual Boy game *TeleroBoxer*, later he moved into graphic design. After *Wario Land 4*, Nakada designed maps for *Metroid Fusion* and *Metroid: Zero Mission*.

- » Chief Director on *WarioWare Touched!*.
- » Game Designer on *WarioWare Touched!* and *WarioWare Smooth Moves*.

KO TAKEUCHI

Background Art Designer

After working on horror action game, *D-2*, for the Sega Dreamcast, Ko Takeuchi came to Nintendo, where he worked on a *Hamtaro* game before doing the background art on *Wario Land 4*. Takeuchi later went on to design the characters of the *WarioWare* and *Rhythm Heaven* series.

- » Art Director on *WarioWare, Inc.: Mega Party Game\$!*.
- » Designer on *WarioWare, Inc.: Mega Party Game\$!*, *WarioWare Touched!*, and *WarioWare Twisted!*.
- » Character Designer on *WarioWare, Inc.: Mega Party Game\$!*, *WarioWare Touched!*, *WarioWare Twisted!*, *WarioWare Smooth Moves*, *WarioWare Snapped!*, and *WarioWare D.I.Y.*
- » Game Designer on *WarioWare, Inc.: Mega Party Game\$!*, *WarioWare Touched!*, *WarioWare Twisted!*, and *WarioWare Smooth Moves*.
- » Graphic Designer on *WarioWare, Inc.: Minigame Mania* and *WarioWare, Inc.: Mega Party Game\$!*.
- » Design Director on *WarioWare Twisted!*.
- » GBA *WarioWare* Team on *WarioWare, Inc.: Mega Party Game\$!*.
- » Voice Actor on *WarioWare, Inc.: Mega Party Game\$!* and *WarioWare Twisted!*.

TAKAYASU MORISAWA

Designer

Takayasu Morisawa has worked as a designer on the *Metroid* series. *Wario Land 4* was his first game at Nintendo.

- » Design Director on *WarioWare Touched!*.
- » Game Designer on *WarioWare Touched!*.

- » Voice Actor on *WarioWare Touched!*.

RYOHJI YOSHITOMI

Music Producer

Ryohji Yoshitomi is notable for doing the music in *Metroid II: Return of Samus*, *Wario Land 4*, and the *WarioWare* games.

- » Sound Director on *WarioWare, Inc.: Minigame Mania* and *WarioWare, Inc.: Mega Party Game\$!*.
- » Music Composer on *Wario Land: Super Mario Land 3* and *WarioWare, Inc.: Minigame Mania*.
- » Game Designer on *WarioWare, Inc.: Minigame Mania*.
- » Voice Actor on *WarioWare, Inc.: Mega Party Game\$!*.
- » GBA *WarioWare* Team on *WarioWare, Inc.: Mega Party Game\$!*.
- » Special Thanks on *WarioWare Twisted!* and *WarioWare Touched!*.

CHARLES MARTINET

Voice Actor

Charles Martinet has been the voice of Wario since *Mario Kart 64*. He also voices Mario, Luigi, and Waluigi. Martinet occasionally does outside acting and voice work for other media.

- » Voice Actor on *Wario World*, *WarioWare, Inc.: Mega Party Game\$!*, *WarioWare Touched!*, *WarioWare Twisted!*, *WarioWare Smooth Moves*, *Wario Land: The Shake Dimension*, and *WarioWare D.I.Y.*

JUNKO YOSHITOMI

Voice Actor

- » Voice Actor on *WarioWare, Inc.: Minigame Mania*.

JAMES MESBUR

Voice Actor

AYUMI SHIMOKAWA

Voice Actor

YASUO INOUE

Artwork

Yasuo Inoue has worked at Nintendo for 20 years, doing artwork and manual design.

- » Packaging and Manual Designer on *Virtual Boy Wario Land*, *Wario Land 2*, *Wario World*, *WarioWare Twisted!*, *WarioWare Touched!*, and *Wario: Master of Disguise*.

SACHIKO NAKAMICHI

Artwork

Sachiko Nakamichi has worked on some of Nintendo's biggest franchises, including *Pokemon*, *Kirby*, and *Donkey Kong*.

- » Packaging and Manual Designer on *Wario Land 3*.
- » Artwork on *WarioWare Smooth Moves*.

TAKAHIRO HARADA

Special Thanks

- » Producer on *Wario Land: The Shake Dimension*.
- » Special Thanks on *Wario Land: Super Mario Land 3*.

HIROSHI MOMOSE

Special Thanks

- » Game Designer on *WarioWare Touched!*.
- » Programmer on *WarioWare Touched!*.
- » Tool Programmer on *WarioWare, Inc.: Minigame Mania*.

HIROKO SUGINO

Special Thanks

MIHO HATTORI

Special Thanks

- » NOA Debugger and Tester on *WarioWare, Inc.: Minigame Mania*, *Wario World*, and *WarioWare, Inc.: Mega Party Game\$!*.

TAKAKO MORITA

Special Thanks

- » Special Thanks in *WarioWare, Inc.: Minigame Mania*.

KIMIKO NAKAMICHI

Special Thanks

FUMIKO MIYAMOTO

Special Thanks

- » Game Designer on *WarioWare Touched!*.
- » Designer on *WarioWare Touched!*.
- » Voice Actor on *WarioWare Touched!*.

KAMON YOSHIMURA

Special Thanks

YOSHINOBU MANTANI

Special Thanks

- » Debugger on *WarioWare, Inc.: Minigame Mania*, *Wario World*, *WarioWare, Inc.: Mega Party Game\$!*, *WarioWare Twisted!*, and *WarioWare Touched!*.

WILLIAM TRINEN

Special Thanks

- » Special Thanks on *Wario Land 3*.
- » Localisation on *WarioWare, Inc.: Minigame Mania*, *WarioWare, Inc.: Mega Party Game\$!*, *WarioWare Twisted!*, *WarioWare Touched!*, *WarioWare Smooth Moves*, and *Wario: Master of Disguise*.

